FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

JANUARY, 1954

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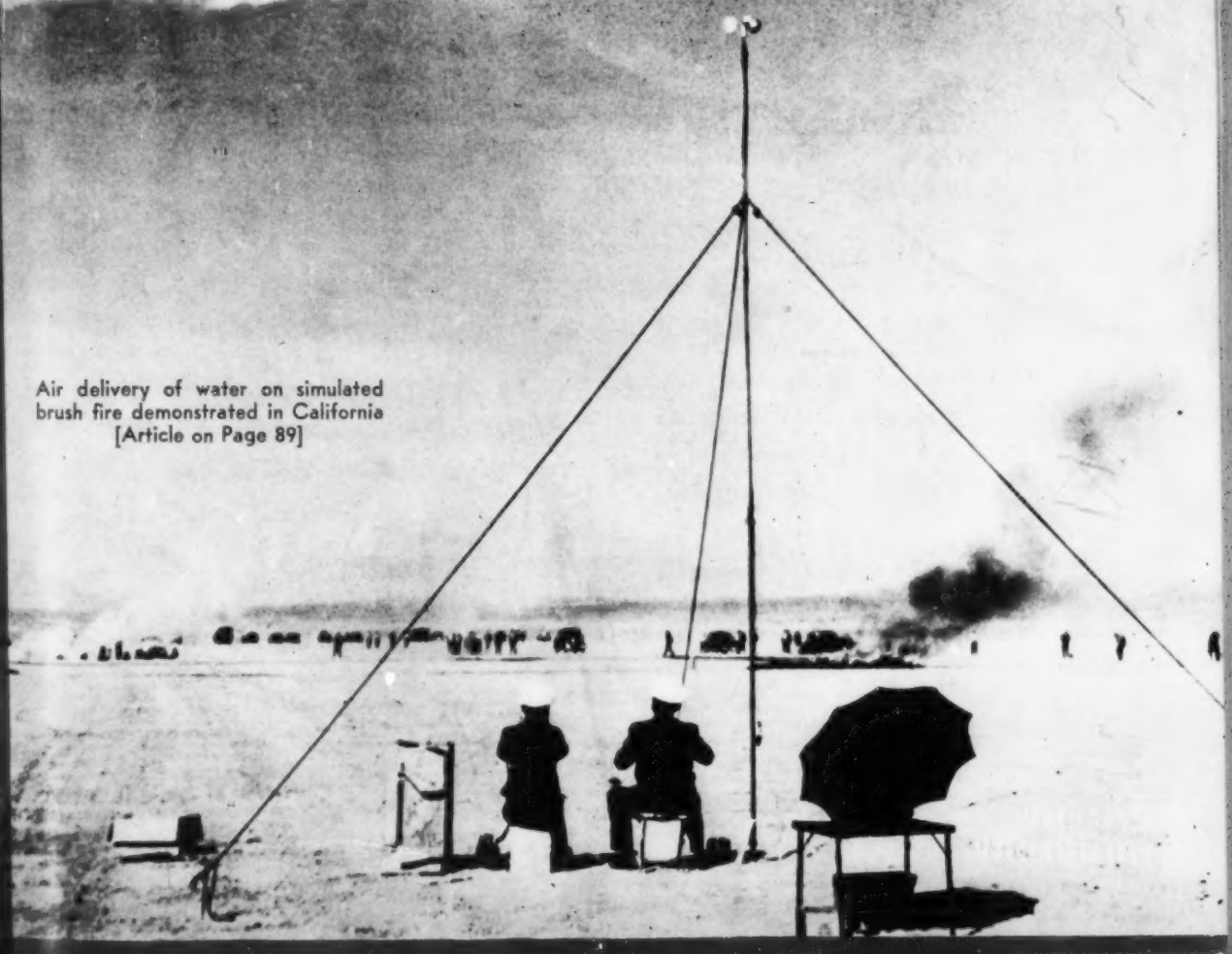

Air delivery of water on simulated brush fire demonstrated in California
[Article on Page 89]

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is Your Community protected

by the MOST EFFECTIVE resuscitating apparatus known to Science?

EMERSON Resuscitators

SIMPLE to operate, with no complicated adjustments.

SAFE for adults, children, or infants. There is no record of lung injury from the pressures used in thousands of cases in more than ten years.

EFFECTIVE The suction phase, alternating with the positive phase, helps circulation and can be of life-and-death importance, especially to victims in shock.

ACCEPTED by the American Medical Association for use by laymen (A.M.A. Journal, May 30, 1942). Relied on from coast to coast by thousands of leading hospitals and fire departments.

WRITE for our free

Medical Reference on Resuscitation

Information and Demonstration

Bulletin on a New Manual Method of Artificial Respiration

"Simplest and Safest"

J. H. EMERSON COMPANY

22 COTTAGE PARK AVENUE, CAMBRIDGE 40 MASSACHUSETTS

Only FEDERAL gives you FULL QUALITY!

QUALITY SIGHT

QUALITY SOUND

This Model 1600, 1,000 gallon pumper was built by the OREN Roanoke Corp. of Roanoke, Virginia. The pumper features a 240 H.P. engine, 4-man closed cab, swivel-mounted deluge gun, recessed pump panel and other vital equipment for Municipal fire services and Civil Defense use. A Federal Beacon Ray Light on the cab roof and a Federal Model 78A siren on the hood give this fine piece of apparatus, QUALITY protection.

Federal Quality Signals complement the finest fire-fighting equipment now being delivered. On all *new* equipment purchases there is no room for second-choice signal equipment that may endanger your entire investment. As ever, there is no substitute in sirens and lights for Federal Quality Equipment, delivering the utmost in signal strength and dependable performance.

Federal's famous Beacon Ray Light is a spectacularly simple warning light giving full, all-around protection — front, sides and rear. Federal Coaster Sirens, your voice of authority on the streets and highways, are precision produced for faultless performance.

Don't compromise safety with less than the BEST — a FEDERAL TEAM of a Beacon Ray Light *and* a Federal Coaster Siren.

Write today for information about this "perfect pair" of warning signals by Federal.

FEDERAL ENTERPRISES, INC.

FORMERLY: FEDERAL ELECTRIC COMPANY, INC.

8702 SOUTH STATE STREET • CHICAGO 19, ILLINOIS

FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING, THE FIRE ENGINEER, FIRE PROTECTION *and* FIRE SERVICE

FRED SHEPPERD
Editor

ROI B. WOOLLEY
Assistant Editor

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MEMBER
Audit Bureau of Circulations
Associated Business Publications

Stepping Stones—or Stumbling Blocks

To each is given a bag of tools,
An hour glass and a book of rules,
And each must build ere his hour has flown
A stumbling block or a stepping stone."
ANONYMOUS

THE fire service has been built by those who created stepping stones rather than stumbling blocks . . . by those who looked up and not down . . . who said *"come on, let's go"* and not *"get in there"* or *"we can't do it."*

● For three-quarters of a century and more, FIRE ENGINEERING has proudly recounted the thoughts, words and deeds of these fire fighters, lovers of fire fighting and manufacturers of the "tools" of the fire fighter. Those issues dating back 76 years are an inspiring diary of progressive building . . . of creating stepping stones rather than stumbling blocks. No one can read and reread those issues without reaffirming his belief in and admiration for the nation's fire service, and for those stalwarts who have builded it so well.

● As we enter a new year let us each remember the bit of wisdom reproduced above and resolve to build still more and better stepping stones and fewer stumbling blocks.

The Publishers

FIRE ENGINEERING

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A CASE-SHEPPERD-MANN PUBLICATION
"*Specialized* Leadership"

FABRILON

No other hose but FABRILON gives you this. The extreme compactness of FABRILON as compared to ordinary plain-weave hose is immediately evident. The great *strength* of FABRILON and how it is combined with *Light Weight*, *Flexibility* and *Compactness* is a story of efficient combination of high grade materials so as to produce maximum performance. Pound for pound there is roughly *twice the strength*, *wear* and *service* built into the compact FABRILON coil above as compared to the heavier, bulkier, white plain-weave hose.

FABRIC FIRE HOSE COMPANY

THE ONLY EXCLUSIVE MANUFACTURER OF FIRE HOSE IN AMERICA

SANDY HOOK CONNECTICUT

IN CANADA BICKLE-SEAGRAVE, LTD. WOODSTOCK, ONTARIO

"The solid stream will continue to have a limited degree of usefulness but it is destined to be the secondary form of application in controlling and extinguishing fire. Progress in the tactical employment of water on the fire-ground demands that the primary form of application be that of finely divided particles."

"Had we kept to the old method of lots of water and straight streams we would have used barrels and barrels of water and perhaps would have lost the entire house. While we are not telling anyone what to use, we are firm believers that the fellows talking about fog know their fire-fighting and hope that more fire departments give it a try."

These are your words about water-fog fire fighting

*Actual statements by fire chiefs

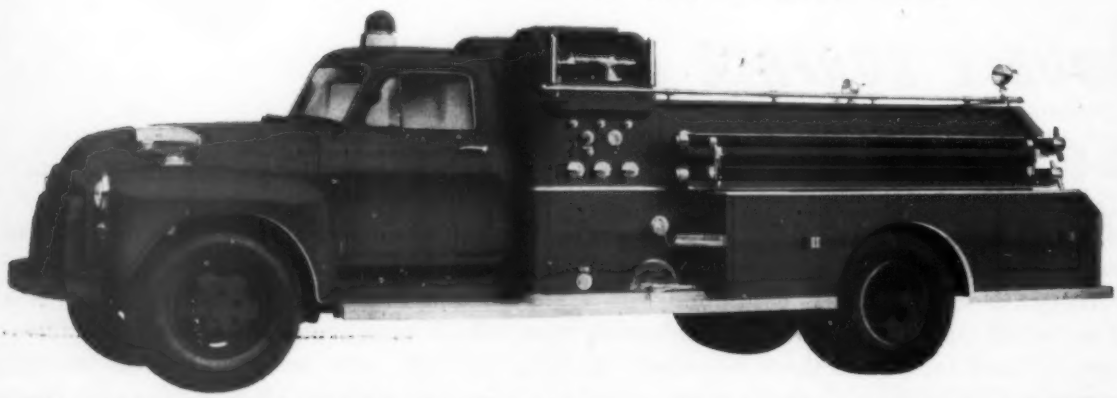
"This type of equipment (water-fog) is coming into common use in practically all of our fire departments."

"In general, the high-pressure nozzles on ¾ inch high-pressure hose reduced the temperatures much faster than the 1½ inch nozzles employed, and which were discharging at approximately the same GPM."

"We were called out to a house that was one mass of flames on the inside. The only exit for the smoke was via a fireplace chimney. Upon arriving three firemen were present. I, being the only man who had experience, set the truck, grabbed the nozzle, rushed up to the house, put the gun through one pane of glass with full fog. All flame went out as soon as the fog hit; then we opened the door and went in to make sure no more fire would ignite, using a total of 25 gallons of water."

*Sources available upon request

BUT here is the last word in high-pressure fog fire fighting



The 1954 John BEAN *high-pressure fog* FIRE FIGHTER

Can be mounted on most standard truck chassis

For complete specifications and the amazing success story of high-pressure fog write John Bean.

JOHN fmc BEAN

John Bean Division, Dept. 126, Lansing, Michigan

ORIGINAL HIGH-PRESSURE FOG FIRE-FIGHTER

A Product of Food Machinery and Chemical Corp.

RESEARCH KEEPS **B.F.Goodrich** FIRST IN RUBBER

This hose handles easier— on or off the truck

A LIGHT hose is much more than a convenience. It means faster handling when speed is all important in checking a blaze. It means more flexibility when racking hose afterwards.

Weight used to mean strength. But since B. F. Goodrich developed Fire King, there's just no advantage in using stiff, bulky hose. Fire King is 15% lighter, much more flexible than other hose. As a result, it gets into action faster, stays flexible even under top pressures, and cuts loading time because it racks naturally on the truck bed.

It's a chemically-produced fiber that makes Fire King so light and flexible. B. F. Goodrich uses this fiber as "filler" cords—the cords that go around the hose and carry the load under pressure. Compared with cotton filler cords used in other hose, this special fiber has three times the strength for the same weight of cord. So Fire King is stronger, can stand higher pressure. Actual service tests prove that this B. F. Goodrich hose, tested to 600 pounds pressure, is *50% stronger* than standard fire hose which is tested to only 400 pounds.

Ease of handling is what sold Chief Harry Barlbort (above, center), of the Spanish Lake (Missouri) Fire Department. He says, "On an alarm, Fire King proves its worth as it's possible to pull the skid with ease—thanks to its light weight."

Next time you need hose, ask your BFG Fire Hose Distributor to show you a sample of Fire King. Compare it with your present hose—for weight, flexibility and strength. Prove to yourself that it's your best hose buy. And remember, while Fire King may cost a little more, it makes up for it by lasting longer. *The B. F. Goodrich Company, Dept. M-166, Akron 18, Ohio.*

B.F.Goodrich
INDUSTRIAL PRODUCTS DIVISION

for RUGGED DUTY!

MIDWESTERN PROTECTIVE CLOTHING

The overwhelming preference for Midwestern Protective Clothing is the result of outstanding performance when the going is tough and the chips are down. The superior quality, design, fabric texture and many exclusive features found in Mackinaw Coats and other Midwestern garments help increase your department's efficiency and provide extra protection for your men at the scene of the blaze. There is no substitute for the expert workmanship, built-in comfort and longer wear you get by specifying Midwestern.

PROTECTION—COMFORT—SERVICE

You will find the type of fabric exactly suited to your needs in our wide selection of rubber materials. You can absolutely depend on the softness and flexibility of these high grade materials to meet your most exacting requirements for lasting comfort, rugged service and greater efficiency on the job.

For complete information on our full line of firemen's protective clothing, see your Midwestern dealer. A letter to the factory will also bring you literature and material samples for your inspection.

NONE GENUINE WITHOUT THIS TRADE MARK

MIDWESTERN MFG. CO., Mackinaw, Illinois

Manufacturers of the Famous **MACKINAW Coats**

There's *Extra Value* IN AMERICAN-LAFRANCE FIRE ENGINES

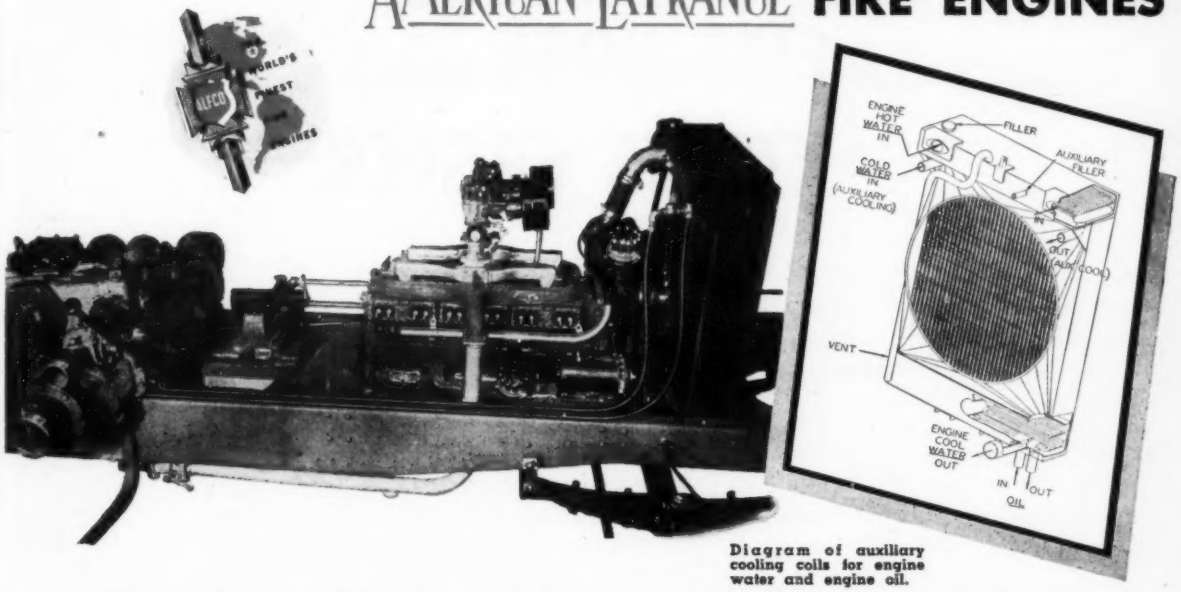
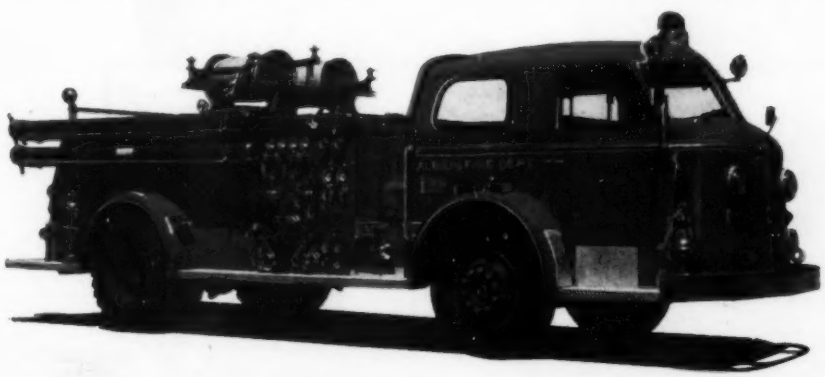


Diagram of auxiliary cooling coils for engine water and engine oil.

Dual cooling system protects engine under all operating conditions . . .

The wide range of operating conditions encountered in fire service requires specialized construction for best operation. From summer heat to winter cold; from booster lines to master streams; short periods of operation to days of continuous full load operation are the variables that must be met for high efficiency and long dependable life.

An auxiliary cooler with manual control is provided to maintain proper engine operating temperature under all conditions. An auxiliary cooler is also provided, automatic in operation, to control engine oil temperature for proper oil body and strength for efficient lubrication. This dual cooling system is another Extra Value in American-LaFrance fire engines providing longer dependable operating life.



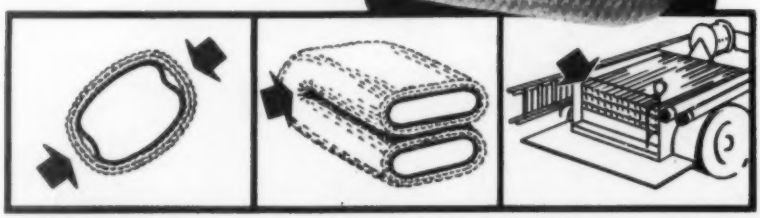
Sixteenth in a series of advertisements showing the EXCLUSIVE EXTRA VALUES in American-LaFrance fire engines.

• *For details of these EXTRA VALUES and many more, write for illustrated booklet.*

AMERICAN-LAFRANCE-FOAMITE CORPORATION
ELMIRA, NEW YORK, U.S.A.
LAFRANCE FIRE ENGINE AND FOAMITE LIMITED
TORONTO 9, ONTARIO, CANADA

FLEXFOLD FIRE HOSE FOLDS EASIER

★ . . . and with **less wear at the folds!** Why? Because Republic Rubber's FLEXFOLD, a flawless, double-jacket municipal fire hose, is built with special mobile-edge tube . . . **tubes that flow within the folds of the jacket without distortion or creasing.** FLEXFOLD fire hose is easier handling. Unrestricted edge movement of the rubber tube (unanchored along the fold) reduces tension and compression. FLEXFOLD fire hose packs more compactly. Your truck or storage racks will hold MORE FLEXFOLD.



1. Exaggerated cross sectional view showing mobile-edge FLEXFOLD tube . . . a tube free to "give" with the folds.

2. Mobile-edge tube "moves" as the hose is folded. This reduces tensional and compressional stresses, permits tighter folding with less danger of "crease damage."

3. Structural mobility of FLEXFOLD fire hose means you can pack more hose in less space on the truck or on the storage racks.

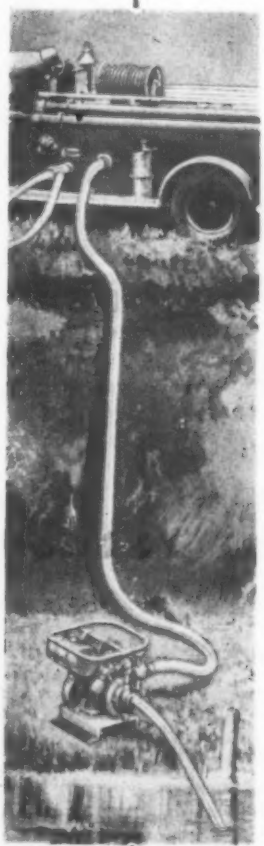
Write now for complete information on Republic's FLEXFOLD fire hose.

REPUBLIC RUBBER DIVISION

LEE RUBBER & TIRE CORPORATION, YOUNGSTOWN 1, OHIO

INDUSTRIAL RUBBER PRODUCTS

pack extra fire-fighting punch with this lighter, more powerful American-Marsh 3XD Pump!



Useful? You bet it's useful! And more than ever, now, because recent design improvements have *increased* engine horsepower and *reduced* total weight. You get greater pressure—greater water volume delivered—and easier carrying, too!

As a booster carried on your apparatus, it can help you out of many tight spots! From pond, stream or cistern, the 3XD delivers enough water to pumper, under normal conditions, to supply two 1½″ hose lines with ½″ nozzles, or one 2½″ line with ¾″ nozzle. Left at the fire to pump out a basement, it frees your pumper to return to quarters.

Highly popular with rural departments, the 3XD is equally valuable in the city for civil defense, flood recovery, etc.

For complete details, write for Bulletin 8120

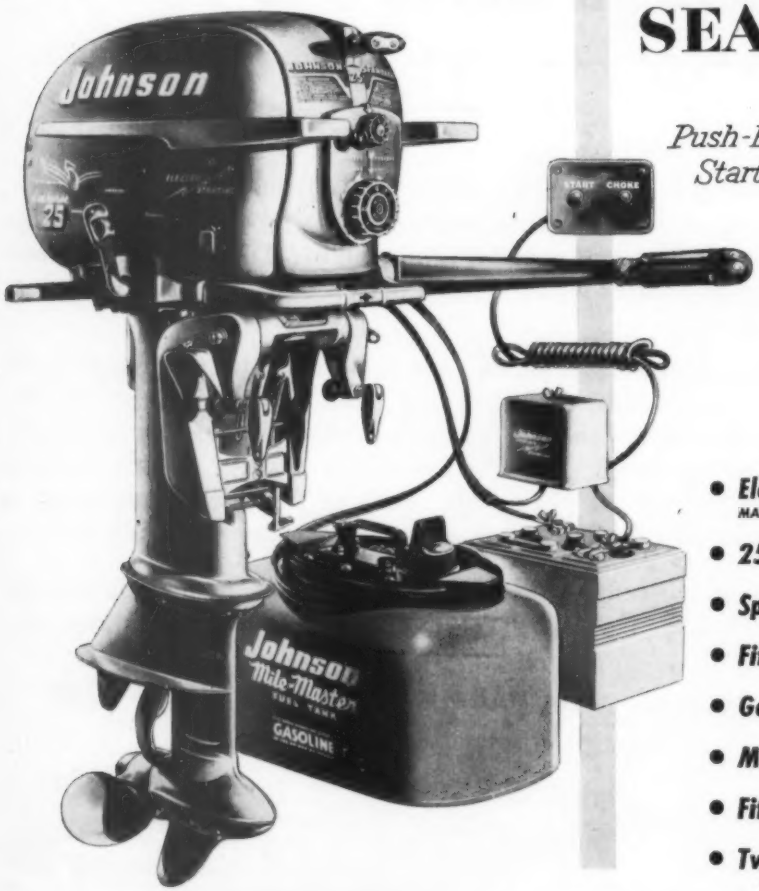
Use the 3XD as a booster for your pumper — or to pump out basements. Handles dirty water without serious damage.

AMERICAN-MARSH PUMPS

BATTLE CREEK MICHIGAN

CANADIAN APPARATUS PLANT: American-Marsh Pumps (Canada), Ltd., Stratford, Ontario, Canada

New! ELECTRIC STARTING SEA-HORSE 25



Push-Button Starting

- **Electric Starting!** — ALSO EQUIPPED FOR MANUAL STARTING
- **25 Horsepower!**
- **Speeds over 30 mph!**
- **Fitted for Ship-Master Remote Control!**
- **Gear Shift!** FORWARD-NEUTRAL-REVERSE
- **Mile-Master Fuel System!** 6 GALLONS
- **Fitted for Fuel-Master Supply System!**
- **Twist-Grip Speed Control!**

Johnson
SEA-HORSE
OUTBOARD MOTORS

Talk about the "automatic outboard." This is IT! Here is everything that has made the Sea-Horse 25 sensational — PLUS JOHNSON-ENGINEERED ELECTRIC STARTING!

It spins into action at the first touch of the starter button (still equipped for manual starting, too). In fact, this great motor is engineered so that you can choke, start, shift, throttle, steer, and stop *without leaving your seat up front!* In addition to the 6-gallon Mile-Master Fuel System (standard equipment), it's fitted for Johnson's amazing new Fuel-Master Supply System, for *extra-long* cruising range — and Ship-Master Remote Control, for shift-and-throttle operation.

Nothing has ever been created to make outboard handling so simple, so convenient, so luxurious. Get the full story. See your Johnson Dealer. Look for his name under "Outboard Motors" in your classified phone book.

FREE!

Send for colorful, fully-illustrated catalog which describes, in detail, the Electric Starting Sea-Horse 25 and the four other great Johnsons. Catalog is yours for the asking. Write to:

JOHNSON MOTORS
7000 Pershing Road, Waukegan, Illinois
In Canada: Mfd. by Johnson Motors, Peterborough

5 GREAT SEA-HORSES FOR 1954

ELECTRIC STARTING SEA-HORSE 25—25 hp. The "automatic outboard" $498.00*
SEA-HORSE 25—25 hp. Over 30 mph! Everything Deluxe $410.00*
SEA-HORSE 10—10 hp. New! Improved! Now more brilliant than ever! $297.50*
SEA-HORSE 5½—5¼ hp. Revolutionary *Quiet!* Suspension Drive. All the "big-motor" features with "little-motor" weight $210.00*
SEA-HORSE 3—3 hp. "The littlest Sea-Horse." Rugged. Amazing Angle-matic Drive ... $145.00*
SHIP-MASTER REMOTE CONTROL—Shift-and-throttle. Corrosion-proof. Instant hook-up on Sea-Horse 5½, 10 and both 25's. From $29.50*

**Prices f.o.b. factory, subject to change. OBC certified brake hp at 4000 rpm.*

A SIGNIFICANT *Announcement*

to the Dealers and Users of

UNOX

TRADE-MARK

PENETRANTS

To accelerate the increasing use of UNOX penetrants in the vital field of fire protection . . . to provide broader distribution of these unexcelled wetting agents, we have appointed The UNOX Company, a division of McFarland Manufacturing Corporation, as exclusive distributors of UNOX Brand Penetrants for the United States and foreign countries.

THE UNOX COMPANY

1630 ROBERTS STREET • HOUSTON 3, TEXAS

A Division of

McFARLAND MANUFACTURING CORPORATION

For the past several years McFarland Manufacturing Corporation has devoted its facilities to the development and improvement of specialized equipment for the use of UNOX penetrants in fire protection. The efficiency of McFarland equipment . . . the effectiveness of UNOX penetrants in fire extinguishment . . . bring to business, industry and municipalities outstanding advancements in fire-fighting materials and equipment.

The appointment of this exclusive distributor of UNOX penetrants facilitates the appointment of jobbers and dealers throughout the United States and abroad for the sale of the following:

"UNOX" PENETRANTS

Convert ordinary water into wetter water to produce the most efficient, general-purpose fire extinguishing agent now known.

McFARLAND WETTER WATER FIRE WAGONS

Portable, pressurized units for instant application of wetter water to fires wherever and whenever they occur. Available in seven styles, in capacities from 10 to 100 gallons.

DUGGAN PROPORTIONERS

A McFarland product for proportioning UNOX penetrants on fire-fighting equipment and into fire protection systems. Capacities from 5 to 2,000 gallons per minute. Operate on direct water flow at any pressure.

McFARLAND IN-LINE PROPORTIONERS

For proportioning UNOX penetrants into fixed fire protection systems.

"UNOX" is a registered trade-mark of Union Carbide and Carbon Corporation

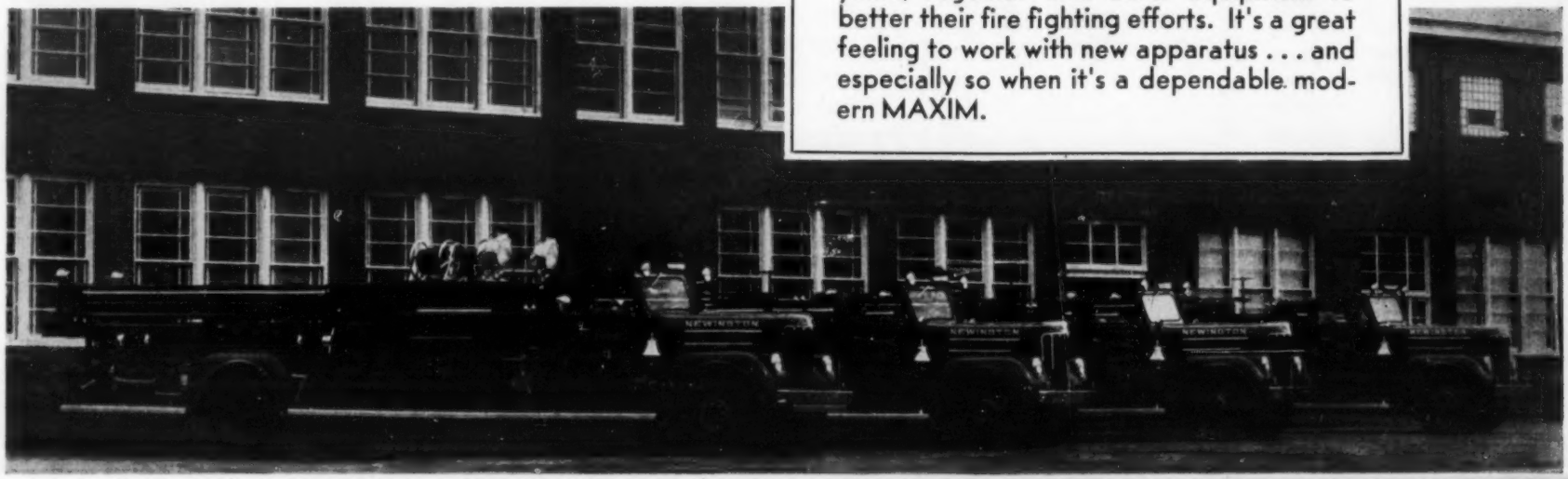
CARBIDE and CARBON CHEMICALS COMPANY

A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.

FOUR NEW MAXIMS at NEWINGTON

Newington, Connecticut, can be proud of their record. The 120 volunteer members of the three companies in Newington, Conn., through their fire record and full cooperation with the Board of Fire Commissioners were awarded for their efforts with replacement of their four old pieces of apparatus with four new Maxims in three years, together with other equipment to better their fire fighting efforts. It's a great feeling to work with new apparatus . . . and especially so when it's a dependable modern MAXIM.

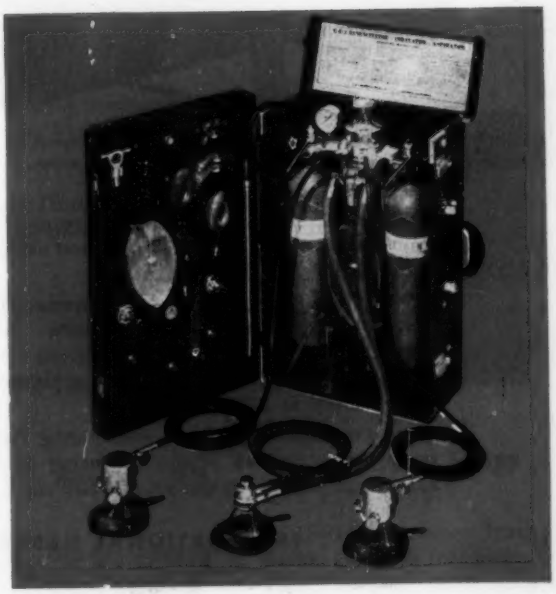
MAXIM MOTOR COMPANY
MIDDLEBORO, MASS.



Save More Lives With E & J RESUSCITATORS

- In asphyxiation cases the victim needs oxygen FAST; *the E & J breathes pure oxygen for the patient automatically, safely and effectively as long as necessary.*
- The victim may be severely injured or hard to reach for manual resuscitation; *the E & J touches only the face and can even resuscitate through a catheter if necessary.*
- The victim's throat may be blocked by unseen obstruction or faulty head position; *the E & J signals instantly if oxygen can't enter the lungs and it provides an aspirator to remove normal obstructions. When a partial obstruction cannot be dislodged, the E & J can be adjusted to usually by-pass it and get oxygen to the lungs at a slow but life-saving rate.*
- The victim's heart action may be weak; *the alternating positive and negative pressures as used by the E & J have been shown to benefit heart action.*

These are just a few of the reasons why Rescue Squads call the E & J their "greatest life-saving tool." Check these and many others at a free, full-scale demonstration right in your own Department. Just write or wire today to:



E & J RESUSCITATOR • INHALATOR • ASPIRATOR

Triple Model Illustrated

E & J MANUFACTURING COMPANY

Dept. 526-6, Burbank, California

EXTRA FIGHT

INTERNATIONAL Model R-306. GVW rating 30,000 lbs. Engines available from 266 to 318 hp. 5-speed transmission. 1250 GPM pump.

INTERNATIONAL fire truck chassis are tough-job engineered and designed to exceed every fire department requirement.

There's an INTERNATIONAL that's exactly right for the needs of your community. The INTERNATIONAL line includes seven chassis and eight engines, with range of pumping capacities from 500 to 1250 GPM.

INTERNATIONAL tough-job engineering has made INTERNATIONAL Trucks the heavy-duty sales leader for 22 straight years. That leadership means long life, lowest maintenance costs, dependable performance at every fire.

Every INTERNATIONAL fire truck chassis is specially designed to have an extra margin of toughness, speed, flexibility, and safety—beyond normal requirements.

Be sure to specify INTERNATIONAL fire truck chassis for extra dependability. Ask your INTERNATIONAL Dealer or Branch for full details on INTERNATIONALS that fit the needs of your community.

INTERNATIONAL HARVESTER COMPANY • CHICAGO

International Harvester Builds **McCORMICK®** Farm Equipment and **FARMALL®** Tractors . . . Motor Trucks . . . Industrial Power . . . Refrigerators and Freezers

Better roads mean a better America

INTERNATIONAL® TRUCKS

"Standard of the Highway"

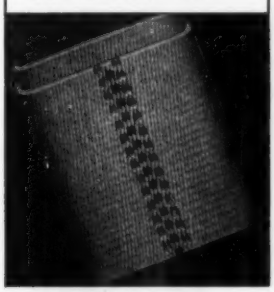
Now a great new hose proved by two years of field testing

THE *American*
COTTON-SYNTHETIC JACKET *Hose*

400 AND 600 LB. TEST

50 FT. ORDINARY COTTON JACKET 2½ INCH

50 FT. AMERICAN COTTON-SYNTHETIC 2½ INCH
18% LESS WEIGHT
27% LESS BULK
50% STRONGER



Try this great new hose. See for yourself how its long-lived cotton-synthetic jacket and laminated natural rubber lining make for easy handling, while saving space and weight. Here's the story —

EASIER TO HANDLE—50′ of this AMERICAN Cotton-Synthetic Hose weighs 18% less than 50′ of average cotton jacket hose . . . enables firemen to move more hose faster. Also lies flatter, coils better, stays flexible wet or dry.

SAVES SPACE—AMERICAN Cotton-Synthetic enables you to carry at least 25% more hose.

STRONGER—High strength-to-weight ratio remains same wet or dry . . . tests prove it 50% stronger than regular hose.

Why lug heavy, bulky, hard-to-handle hose?
Order AMERICAN Cotton-Synthetic Jacket Hose—available in 400 and 600-lb. test—from your dealer NOW. . . or write us for details.

THE *American* RUBBER MANUFACTURING CO.

AR-26

MAKE SURE; Look for Identifying Stripe and Test Report

AMERICAN Cotton-Synthetic Jacket Hose has red, white, and blue identifying stripe. Each 50′ length is factory proof tested with couplings on, for strength, stretch, and twist. Test report accompanies hose.

Factory & General Offices: • 1145 Park Avenue • Oakland 8, California • Phone OLympic 2-0800

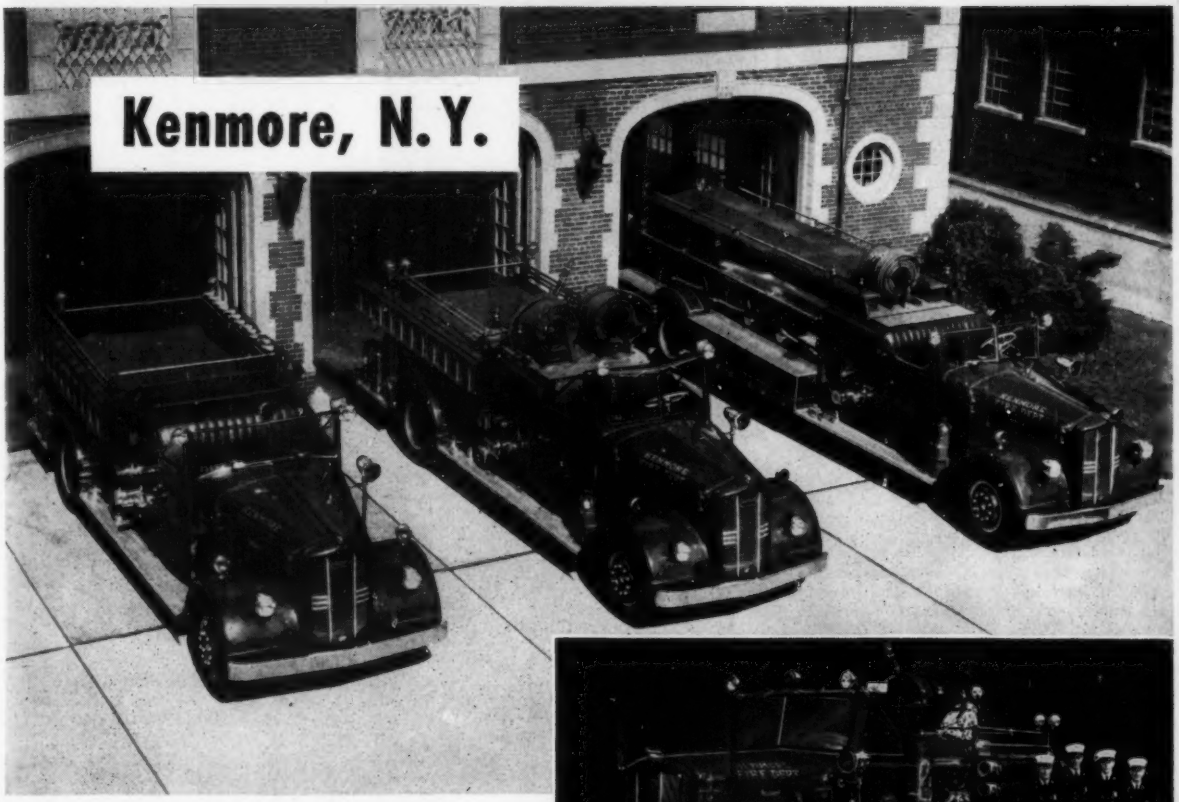
YOUR ASSURANCE OF *FIRST-TIME* AND *EVERY-TIME* DEPENDABILITY FOR FLAMMABLE LIQUID FIRES

JUST OUT—"Foam Fire Protection," illustrated booklet on what Foam is, what it does, how it works. Yours free.

EVERY BATCH of AER-O-FOAM is tested on actual petroleum or polar-solvents fires before it is offered to you. Each phase of the performance is checked—such as extinguishment time, foam volume and sealability.

AER-O-FOAM's tough blanket of tiny air-filled bubbles smothers and cools fire at the same time. What's more, it can be used to insulate surrounding property and equipment against fire damage. Write for data on AER-O-FOAM (for petroleum fires) and AER-O-FOAM "99" (for polar-solvent or petroleum fires). When you need foam fire protection, you need *fire-tested* AER-O-FOAM protection.

NATIONAL
FOAM SYSTEM INCORPORATED
Headquarters for Foam Fire Protection — WEST CHESTER, PA.



Completely equipped with

WARD LaFRANCE Apparatus

WARD LA FRANCE PUMPER, above, is one of three operated by Kenmore Volunteer Fire Department. Standing beside it are Fire Marshal Raymond J. Kirsch, left, Chief Ivan Kimmins, 1st Ass't. Chief Chester Long and 2nd Ass't. Chief Frank Murphy. Kenmore Fire Department also includes 100 well-trained volunteers.

Kenmore, N.Y. has good reason to be proud of its Volunteer Fire Department. The department, now observing its 50th Anniversary, has completely replaced old apparatus with modern Ward LaFrance equipment in the past five years.

MODERNIZE YOUR EQUIPMENT Let Ward LaFrance bring your fire department up-to-date with modern, ruggedly-built apparatus. Choose from pumpers in 130, 150, 200, 240, 250 and 260 H.P., with the weight-to-horsepower ratio necessary for fast get-aways and hill-climbing.

Ward LaFrance Pumpers come equipped with Waterous split housing pump . . . surplus gallonage far exceeding rated capacity . . . flat horizontal booster tank . . . exceptional hose capacity and other outstanding features. Talk to the Ward LaFrance representative in your area. He'll help you select equipment that fits your community's requirements.

Western New York Representative:

T. A. Miller
Fire Equipment Sales Co.
6 Winspear Ave.
Buffalo 14, N.Y.

WARD LaFRANCE
TRUCK CORPORATION

Fire Apparatus Manufacturers for over 35 Years

GENERAL OFFICE & FACTORY: Grand Central Avenue
Elmira, N.Y. Tel. 3-5631

DIRECT FACTORY BRANCH: 139th Street & Bruckner Blvd.,
New York 54, N.Y.
Tel. CYpress 2-3300

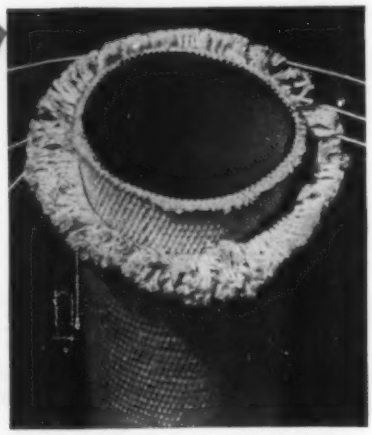
EXPORT: Ward LaFrance International, Inc.,
Elmira, N.Y., U.S.A.
Cable Address: "Wardtruck"

Now

You don't usually run trucks over hose under pressure, but repeated tests and x-ray examinations show that the new Boston Fiber Glass Fire Hose revealed no damage from such brutal treatment!

FOR HIGHEST PRESSURES, YET 20% LIGHTER

New



The filler yarn of specially-treated glass fiber is extremely flexible. 100-ft. length of the new hose without couplings weighs only 81 lbs.!

. . . BOSTON FIBER GLASS FIRE HOSE

The new Boston Fiber Glass Fire Hose offers outstanding new advantages: Specially-treated glass fiber yarn does not absorb water; hose remains remarkably light when wet, more flexible in freezing weather! Easier to coil, too. Requires less time to dry . . . less room for storage . . . less work to use!

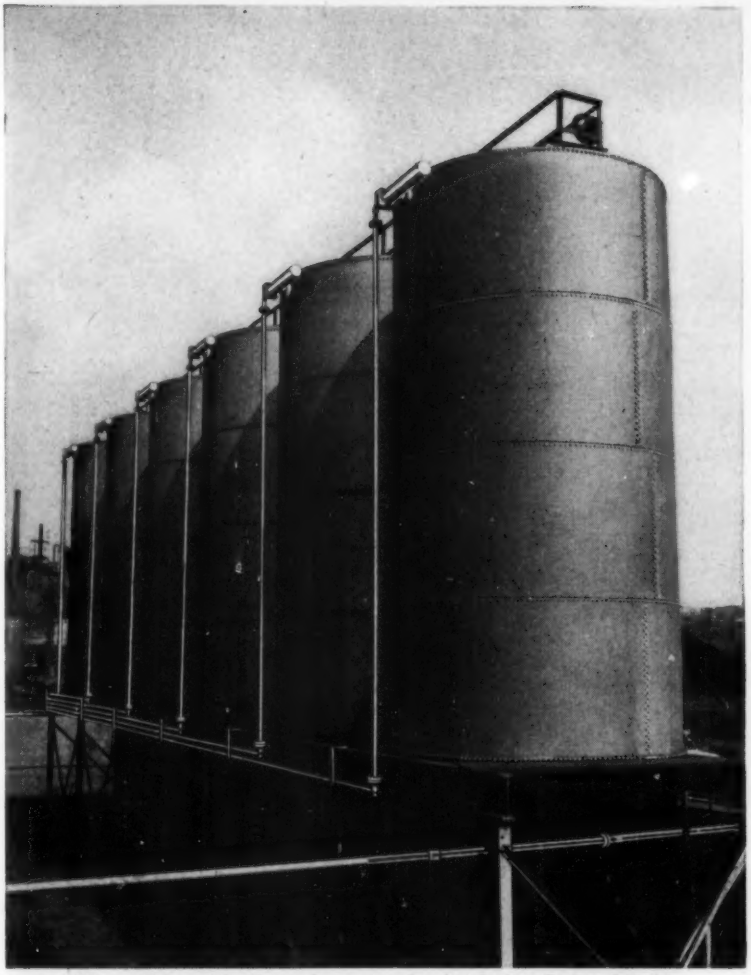
CONTACT ONE OF THE FOLLOWING DISTRICT OFFICES:

BOSTON: Main Office and Plant, P. O. Box 1071, Boston 3, Mass.
ATLANTA • 685 Metal Road N. E.
CHICAGO • 111 North Canal Street
DALLAS • 114 Express Street
KANSAS CITY, MO. • 926 New York Life Bldg.
MINNEAPOLIS • 744 Baker Building
NEW YORK • 30 Church Street
PHILADELPHIA • 210 Long Lane, Upper Darby

WEST COAST REPRESENTATIVES

Lippincott Co., Inc.
LOS ANGELES, California
SAN FRANCISCO, California
SEATTLE, Washington

BOSTON **BOSTON WOVEN HOSE & RUBBER CO., BOX 1071, BOSTON 3, MASS.**



Millions of Gallons of Gasoline are here protected against fire by a Rockwood Double-Barrelled FOAM Chamber.

Jet action for a fire

The cylindrical objects at the top of the gas tanks in the picture above are Rockwood Double-Barrelled FOAM Maker Chambers — protecting millions of gallons of gasoline.

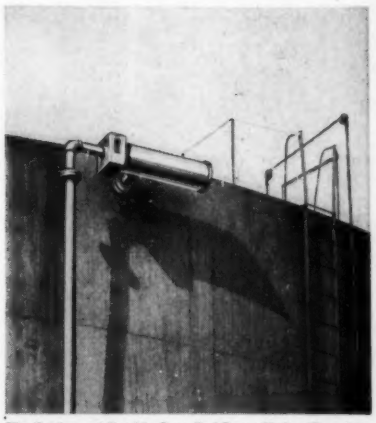
Should fire occur, the FOAM-Making Chambers would quickly control it, thus preventing any rupture of the tanks and the resultant spill fire. Such a fire could endanger the industrial area along the river 25 yards away and the entire river traffic, much of which is strategic material, hauled by river boats.

Due to a special jet action, the manually controlled Rockwood Double-Barrelled FOAM Maker Chamber puts a smothering FOAM blanket *swiftly* over flames, controlling and extinguishing the fire. Internal impinging jets discharge into two concentric barrels, one within the other, dynamically mixing air, water and FOAM liquid into a finer bubble structure than ordinarily possible. This construction is a patented one and typical of the many ways in which Rockwood engineers water to cut fire losses.

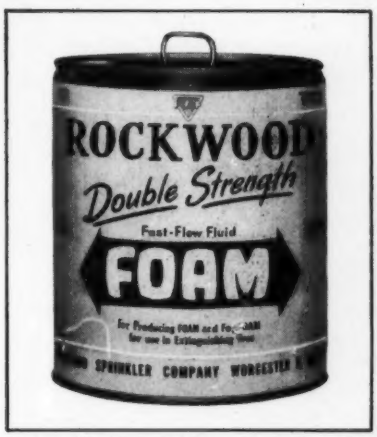
ROCKWOOD SPRINKLER COMPANY

ROCKWOOD *Engineers Water . . . to Cut Fire Losses*

How Rockwood Engineers Water to Cut Fire Losses



The Rockwood Double-Barrelled Foam Maker Chamber has a patented, compact design that eliminates supporting brackets, makes it easy to install. Also easy to inspect from top of tank. Wide range of sizes.



Rockwood Double Strength Foam puts out flammable liquid fires quicker, at lower cost. Three parts FOAM and 97 parts water create a heat-resistant blanket. Double strength FOAM flows freely at −15°F.

SEND FOR THIS INFORMATIVE BOOKLET

ROCKWOOD SPRINKLER COMPANY
Portable Fire Protection Division
54 Harlow Street
Worcester 5, Mass.

Please send me your illustrated booklet on Rockwood fire fighting products.

Name.....
Title.....
Company .....
Street.....
City .....
Zone.....State .....

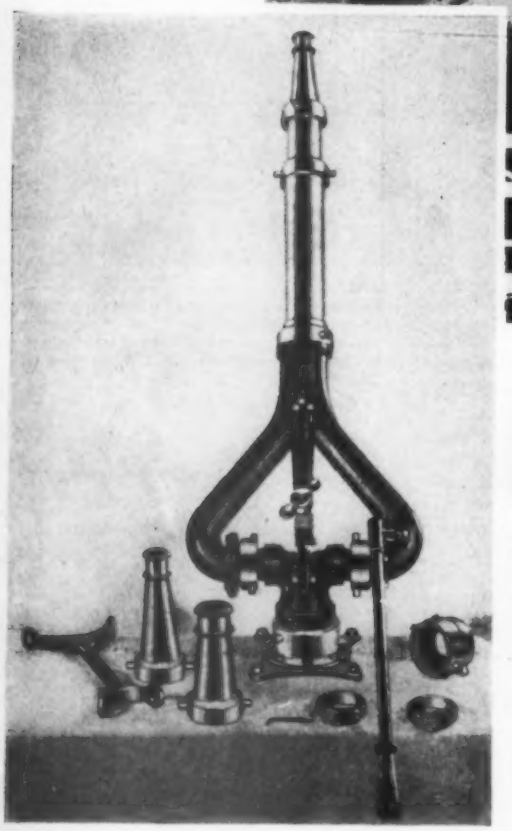
NOW

A STANDPIPE TURRET THAT IS WITHIN THE REACH OF ANY DEPARTMENT

★

COMES complete with 1¼, 1½, 1¾ tips, reducer, hose coupling, and base for 2½" standpipe. It's about half the size of our big gun—but throws amazingly effective streams.

Photo shows streams using 1½ inch tip



Eastman STANDPIPE TURRET MODEL 10

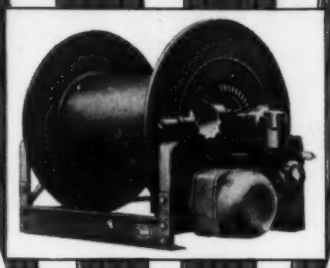
Here is what you've waited for!

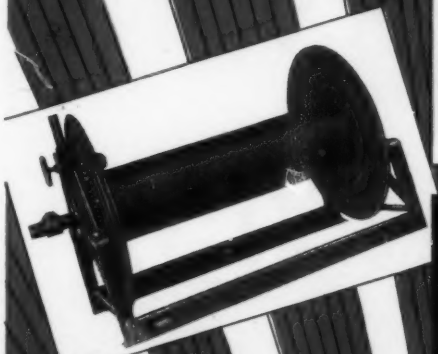
YOU can mount these guns on an old pumper, trailer or pick-up wagon. One man can operate three guns. Full circle operation — easily, by handle and can be locked and left alone in any position. Designed for firetrucks, buildings, lumber yards, etc.

Contact your Eastman Dealer or write

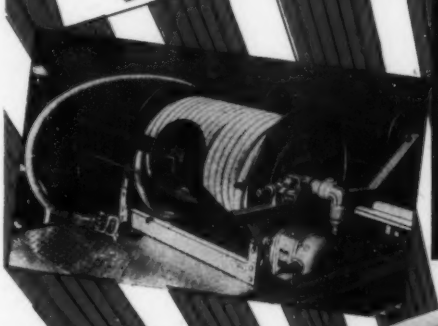
SAMUEL EASTMAN CO., Inc. CONCORD, NEW HAMPSHIRE

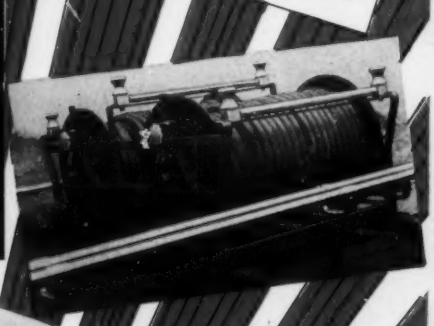
No Finer Hose Reels Made!

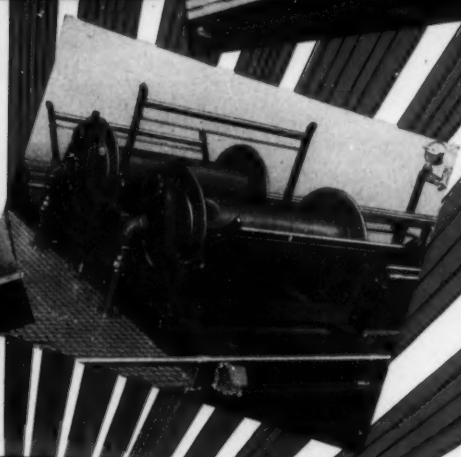




Acceptance of Hannay Hose Reels by the nation's foremost fire fighting equipment manufacturers is the best endorsement of this superior equipment







See the New HANNAY HOSE REEL with EXPLOSION-PROOF MOTOR

HANNAY
REG. U.S. PAT. OFF.
HOSE REELS
CLIFFORD B. HANNAY & SON, INC.
WESTERLO, NEW YORK

ASK YOUR SUPPLIER
or write direct for full information.

OREN

OREN is proud to present its own "NEW LOOK" for 1954!

The Model 1600 Pumper shown above features a 1000 Gallon Multi-Stage Centrifugal Pump . . . new Streamlined front and Rear Fenders providing greatly increased equipment space . . . recessed pump-operating panels . . . full-swivel mounting deck for Deluge Nozzle . . . Three-Man All-Steel Safety Cab . . . and many other interesting and practical features. This is the third OREN for the City of Springfield in as many years — ample testimony to the outstanding value OREN users expect and GET from . . .

"The South's Only Fire Truck Manufacturer"

OREN ROANOKE CORP.

ROANOKE 2, VIRGINIA

When Seconds Count!...

Count on

DUO Safety

FIRE LADDERS

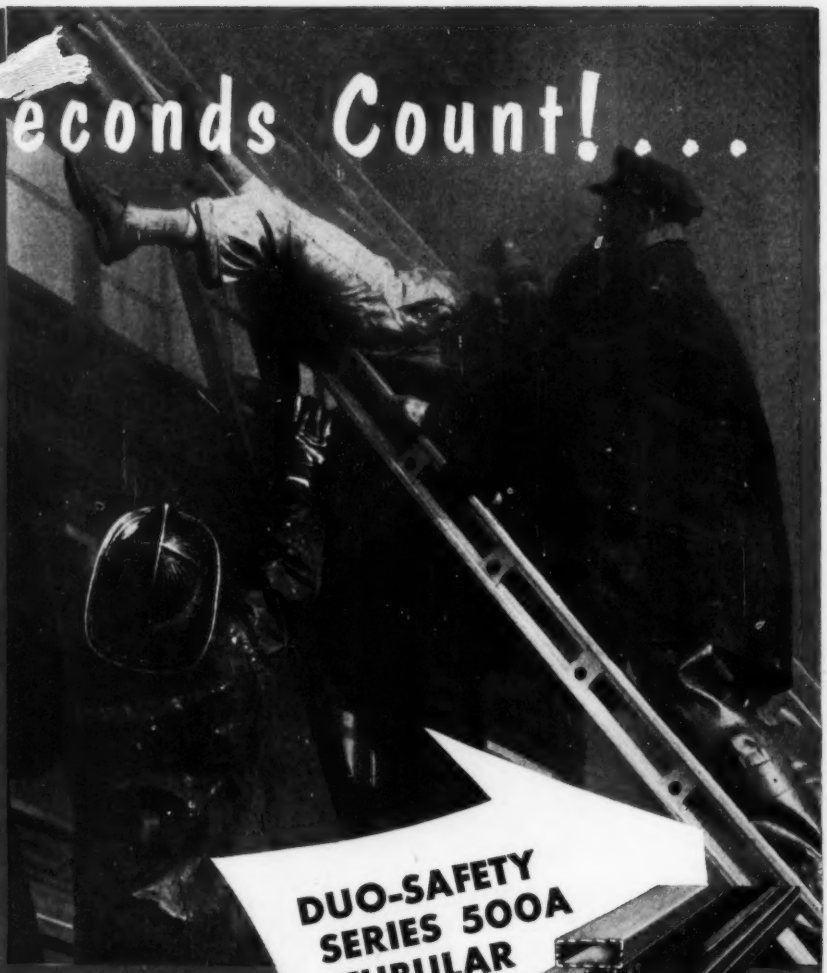


PHOTO BY PHILA. FIRE DEPT.

DUO-SAFETY SERIES 500A TUBULAR RAIL

Here's the proof, in action, of the superior quality, safety and dependability of the famous Duo-Safety line of aluminum fire ladders. The ladder in the above photograph, playing such an important part in the rescue of an unconscious victim, is the Duo-Safety 500 Series Tubular Rail Model. Note how straight and sturdy the rails remain, even under extreme weight. Note, too, that the absence of any projections or sharp, jagged edges provides a smooth rail surface to permit sliding the victim down safely and rapidly. Yes . . . you can count on all ladders in the great Duo-Safety line for the kind of performance that only highest quality delivers. Write today for free, colorful file catalog giving complete information.

DUO-SAFETY LADDER CORP.

809 NINTH STREET, OSHKOSH, WIS.

NEW WAYS TO FIGHT BLAZE!
number 6 in a series

NEW McCULLOCH PORTABLE PUMP

Quells Garage Fire!

Garage on fire! Stream is located 300 feet off road, in swampy land. One man carries a McCulloch 7 FP pump to stream; it supplies pumper on road with 200 gpm through a 3 inch hose, free flow. Pumper runs 1000 feet of hose down road to garage fire, which throws 200 gpm at 45 psi on the fire through a 1 inch nozzle.

Model 7 FP McCulloch

CENTRIFUGAL FIRE PUMP

Weighs only 57 lb complete!
Delivers 250 gpm!
Develops pressures over 100 psi!
Primes at 25 ft suction lift!
Delivers fog, stream, or foam!
(all measurements in U. S. gallons)

PERFORMANCE CHART (with 10-foot suction lift)

Discharge Pressure PSI	10	20	30	40	50	60	70	80	90	100
Discharge Hd. Ft. Water	23	46	69	92	115	138	161	184	207	231
U.S. Gal. Per Minute	250	227	197	164	130	101	78	54	38	25

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McCULLOCH

NATIONWIDE SALES AND SERVICE

5-3206

McCulloch Motors Corporation, Los Angeles 45, California
Export Dept.: 301 Clay St., San Francisco 11, Calif., U.S.A.
Canadian Distributor: 220 W. First Ave., Vancouver, B.C.
525 First Ave., Quebec, P.Q. • 861 Lansdowne St., Peterboro, Ontario

Ohio Fire Dept. Reports:

Lighter . . . stronger hose made with Dacron* is easier to rack . . . easier to handle in action

Lighter, more flexible hose made with "Dacron" compared to conventional hose.

*REG. U.S. PAT. OFF.

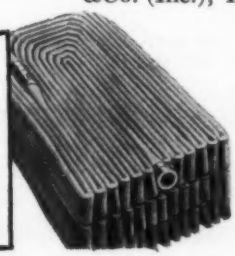
"We've found the advantages of hose made with 'Dacron' are many . . . from easier racking and handling to mildew resistance," reports George Schlotterbeck, Chief of the Hamilton, Ohio, Fire Department. Above, one of the men of Company 7 demonstrates the superior racking capabilities of 600 ft. of hose made with "Dacron", over the same length of conventional hose.

"Dacron" polyester fiber is used as the load-carrying "filling" cord that reinforces the hose. The exceptional strength of this famous man-made fiber, plus its lightness and flexibility, results in a hose that offers strength with less bulk . . . that's at least 15% lighter . . . yet stronger than ordinary hose of the same diameter!

More than two years of field testing have proved the superiority of this new hose in action. It can now be purchased in volume. Before you place your next order, be sure to ask your supplier about hose made with "Dacron". E. I. du Pont de Nemours &Co. (Inc.), Textile Fibers Dept., Wilmington 98, Delaware.

ADVANTAGES OF FIRE HOSE MADE WITH "DACRON":

- Lighter
- Stronger
- More flexible
- Cuts loading time
- Saves space



DACRON

POLYESTER FIBER

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

The FOG-KAR

THIELE . . . DESIGNS

THE ULTIMATE IN COMPACT, DURABLE, ECONOMICAL AND EFFICIENT FIRE FIGHTING EQUIPMENT

COMPACT—Because of its highly efficient engineered design, there is no wasted space. A space-saving roof rack for ladders; storage space in side panels; all equipment placed advantageously. The water tank is mounted on truck frame between side panels with readily accessible manhole for filling and cleaning. Ample room in rear for seating and storage compartments.

DURABLE—Because it is expressly constructed to give long, trouble-free, efficient service. Only the best of equipment and materials are used.

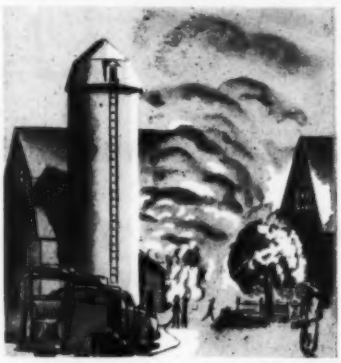
1. Heavy duty doors and locks to seal in control panel.
2. All non-skid tread plate running boards and steps.
3. Finest of Goodrich fire hose.
4. Myers high pressure pumps and guns.
5. Chrome plated rails and handles.
6. Special metal housing under chassis, that captures heat from the motor, exhaust pipe and muffler, gives added durable protection against freezing.

ECONOMICAL—Because it eliminates many high cost operations that are not necessary and only add ornamentation and bulkiness. The "FOG-KAR" costs approximately ONE-HALF as much as other fog fighters.

EFFICIENT—Because of its dexterity plus rugged construction, the Thiele "FOG-KAR" is super efficient. Excellent protection for industry as it is *a one-man operation*, and its lack of bulk enables the operator to move in between crowded buildings. Perfect for rural districts. When fighting brush fires, the "FOG-KAR" can move over rough terrain and be operating while on the go. Less danger of frightening stock and damaging food. Indispensable for fire companies as the Thiele "FOG-KAR" is on the spot quickly, and with fog fighting, the household damage is appreciatively negligible.

COMES IN MANY VARIED MODELS AND CAN BE OUTFITTED WITH TANKS RANGING FROM 350 TO 1000 GALLONS. AUXILIARY TANKS MAY BE ADDED.

— PROMPT DELIVERY —



Write today for additional information about the "FOG-KAR," its many variations, and other THIELE Fire Trucks.

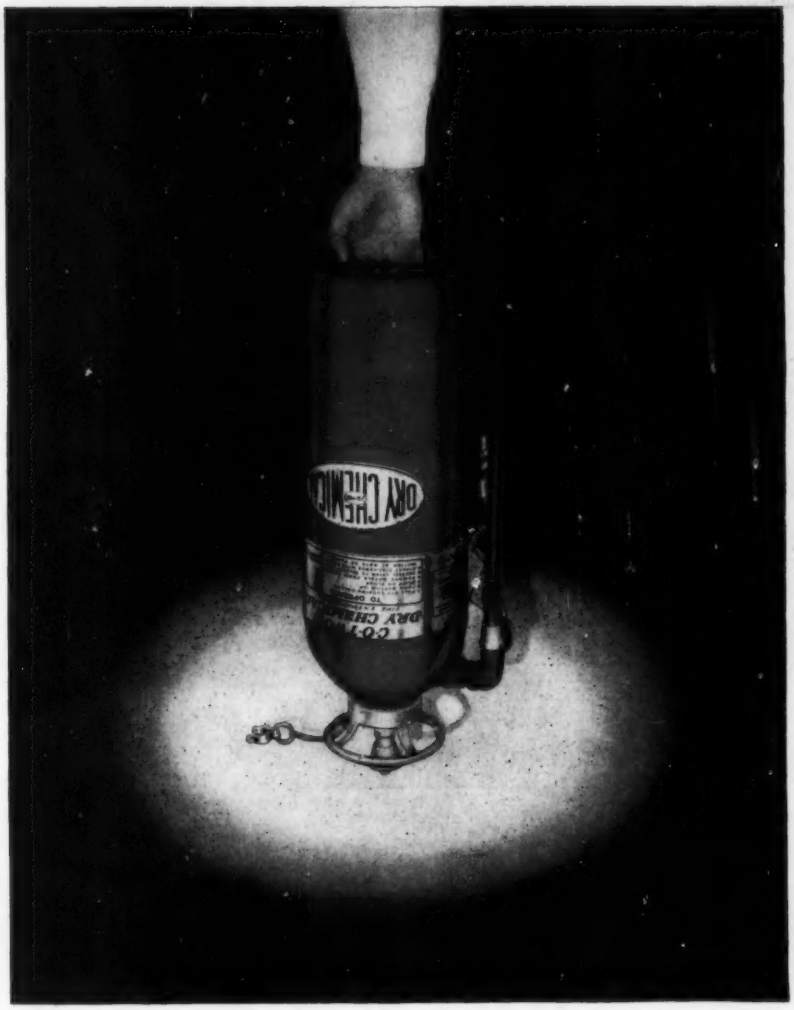
THIELE!

Builders of truck equipment since 1901

W. J. THIELE & SONS, Inc. Pine at Cherry JOHNSTOWN, PA.

Designers, Manufacturers and Distributors of Truck Bodies and Equipment

Bump that assures positive results



When fire strikes, seconds count . . . your fire extinguishers must be the right type and function properly from the very start . . . failure means serious losses.

The growing popularity of the highly effective powdered dry chemical fire extinguishing agent may be hampered by a drawback . . . settling or packing can occur after a lapse of time. However, with C-O-TWO Dry Chemical Type Fire Extinguishers there's no chance of this happening.

The exclusive inverting and bumping design of C-O-TWO Dry Chemical Type Fire Extinguishers provides mechanical breakage of the dry chemical by shifting its position in the cylinder. This outstanding mechanical breakage, plus continuous inert gas pressured agitation or fluffing of the skillfully blended free flowing dry chemical, guarantee lasting, foolproof fire protection.

No other brand on the market today gives you this extra margin for positive results. Inverting and bumping is only one of many unique design advantages that make C-O-TWO Dry Chemical Type Fire Extinguishers your best buy for killing flammable liquid and electrical fires, as well as surface fires involving ordinary combustible materials.

With C-O-TWO Dry Chemical Type Fire Extinguishers the heat-shielding dry chemical is a non-conducting, non-abrasive, non-toxic, finely pulverized powder compound . . . blankets fire instantly. Sizes range all the way from 4 to 150 pounds capacity . . . all fully approved by the Underwriters' Laboratories, Inc., Factory Mutual Laboratories and Government Bureaus.

Act now for complete free information on these top quality, sure-acting fire extinguishers. Remember fire doesn't wait . . . get the facts today!

C-O-TWO

MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeez-Grip Carbon Dioxide Type Fire Extinguishers
Dry Chemical Type Fire Extinguishers
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems
Built-In Smoke and Heat Fire Detecting Systems

C-O-TWO FIRE EQUIPMENT COMPANY
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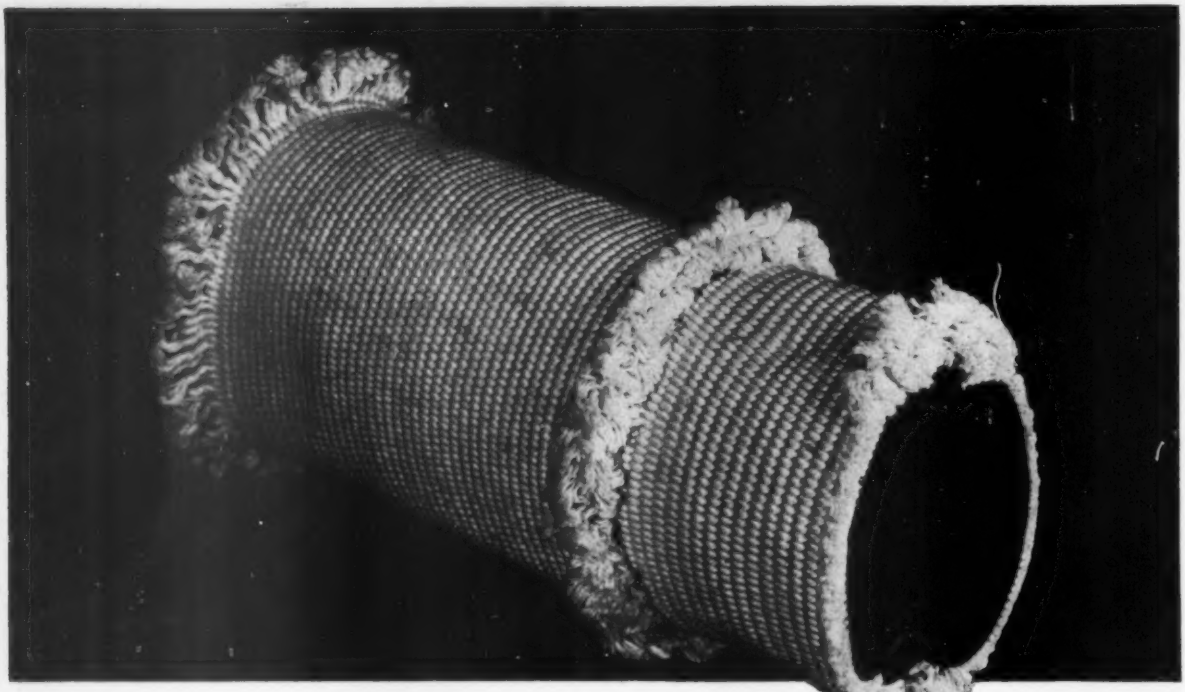
C-O-TWO FIRE EQUIPMENT OF CANADA, LTD. • TORONTO 8 • ONTARIO

Sales and Service in the Principal Cities of United States and Canada

AFFILIATED WITH PYRENE MANUFACTURING COMPANY



FLEXIBLE

HEWITT-ROBINS

Bi-Roll Municipal Fire Hose

Here's the hose that gives you the flexibility and safety you need for fighting fires . . . Hewitt-Robins Bi-Roll municipal fire hose.

Bi-Roll's greater flexibility means that 30% to 40% more hose footage can be stored or dispensed in a shorter time with greater handling ease and safety.

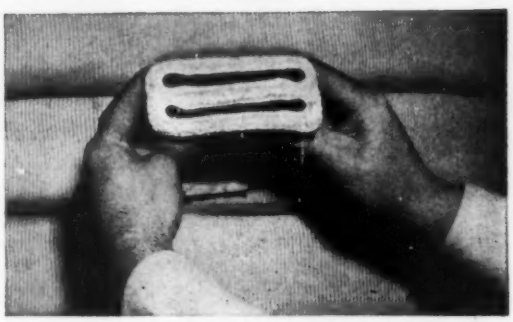
For complete information about Hewitt-Robins Municipal Hoses . . . Bi-Roll—Chemical Booster—Fog—Suction—Street and Sewer Flushing, contact Municipal Fire Hose Division, P. O. Box 974, Buffalo 5, N. Y.

HEWITT (HR) ROBINS

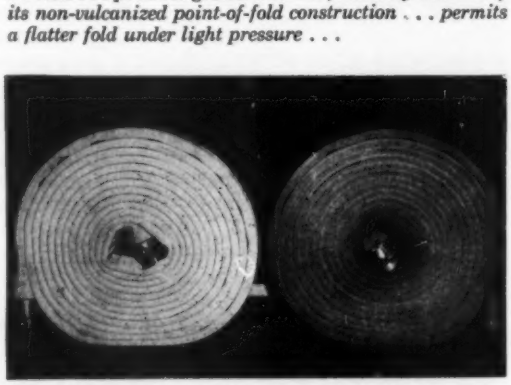
Executive Offices, Stamford, Connecticut

DOMESTIC DIVISIONS: Hewitt Rubber • Robins Conveyors • Robins Engineers Restfoam • **FOREIGN SUBSIDIARIES:** Hewitt-Robins (Canada) Ltd., Montreal Hewitt-Robins Internationale, Paris, France • Robins Conveyors (S. A.) Ltd., Johannesburg

EXPORT DEPARTMENT: New York City



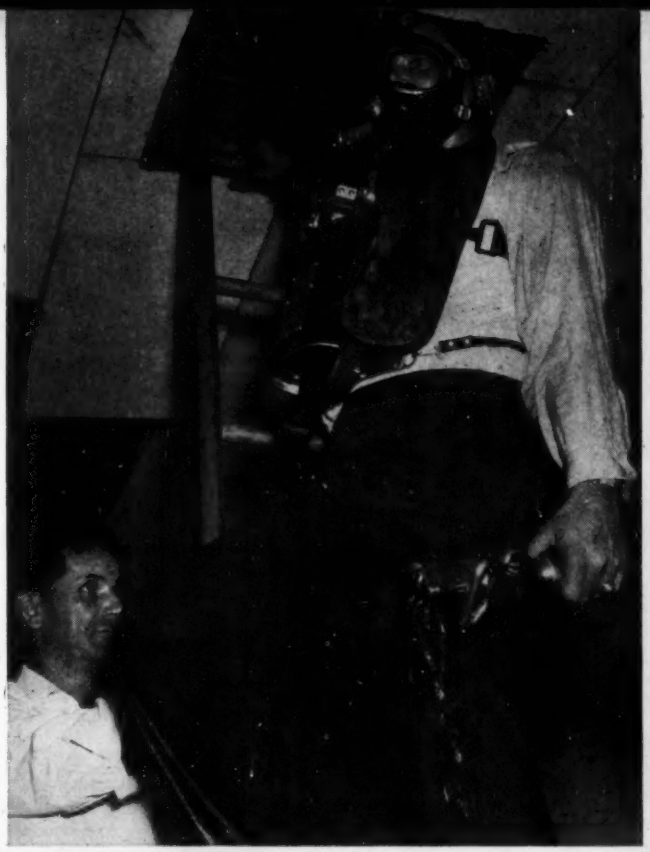
Bi-Roll . . . provides greater over-all flexibility because of its non-vulcanized point-of-fold construction . . . permits a flatter fold under light pressure . . .



Bi-Roll is available either with or without wax and gum treatment. Treated Bi-Roll provides 100% proof against mildew and rot . . . is equally pliable in hot or cold weather.

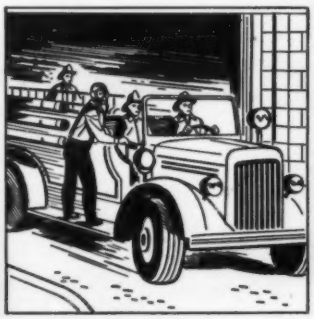
How this M·S·A Man became a "member" of the McMinnville Fire Department

for 5 important minutes!



When James C. Sheehan, representative for the M.S.A. Atlanta Office, was invited to a meeting of the McMinnville, Tennessee, volunteer fire department to demonstrate the advantages of the M.S.A. Chemox, he got more of an opportunity than he bargained for—

1. Jim Sheehan had just started his Chemox demonstration to the volunteer group when a fire alarm rang in.



2. Invited to "come along," Sheehan, with his Chemox still strapped on, hopped aboard with the crew.

3. At the scene, a roadside mart, Sheehan proved to be the only man equipped to enter the smoke-filled building safely.

4. Armed with spotlight and hose line, he climbed through the boiling smoke to the attic and extinguished the fire.

After the fire was out, just three minutes from the time Jim Sheehan entered the attic, Fire Chief D. L. Davies and his men had plenty to say about the Chemox. They agreed that without the Chemox, the building would have probably been partially destroyed and that it would have been a good two-hour fight.

Chief Davies said, too, that it was a mighty impressive demonstration, and placed an order for two Chemox.

The instant you say "TROUBLE" you're ready for it with M·S·A Chemox

Because Chemox needs only your breath to release its pure oxygen for your complete breathing protection, it's ready instantly, under any conditions. And because Chemox oxygen-generating canisters do not depend on high pressure cylinder valves which may leak—require no extra apparatus for recharging—can be stored indefinitely—you're assured of positive and effective service.

Chemox Mask is on in a matter of seconds; permits close-range fire fighting in unbreatheable or oxygen-deficient atmospheres. Write for details.

M·S·A

SAFETY EQUIPMENT HEADQUARTERS

Call the M.S.A. man on your every safety problem . . . his job is to help you

MINE SAFETY APPLIANCES COMPANY

201 North Braddock Avenue, Pittsburgh 8, Pa.

At Your Service: 76 Branch Offices in the United States

MINE SAFETY APPLIANCES CO. OF CANADA, LIMITED

Toronto, Montreal, Calgary, Edmonton, Winnipeg, Vancouver, New Glasgow, N.S.

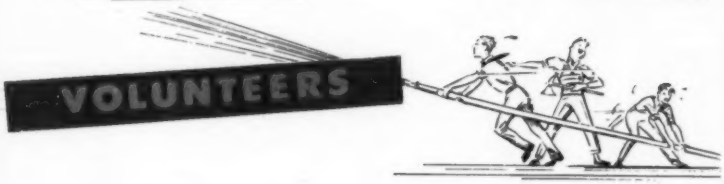
Representatives in Principal Cities in Mexico, Central and South America

Cable Address: "MINSAF" Pittsburgh

For the smaller community- POSITIVE, INSTANT CONTACT with the

FIRE CHIEF

FIRE DEPARTMENT



VOLUNTEERS

RESCUE SERVICE

Provide your community—your property owners and your children — with all of the advantages of a big city fire alarm system.

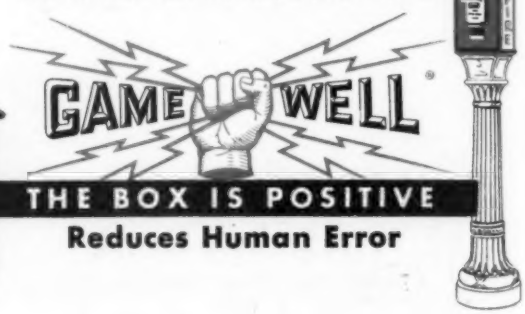
At a cost well within reason, you can have a municipal fire alarm box system that will immediately announce the *location* of a fire.

Best of all, the smaller community can now get the basic fire alarm protection it needs, and extend the system circuit-by-circuit to avoid heavy investment at any one time.

As you know, almost every big fire *starts* as a *small* fire. Prevent delays with a positive, dependable fire alarm box system.

Keep small fires from becoming big fires — with an adequate fire alarm box system.

THE GAMEWELL COMPANY
NEWTON UPPER FALLS 64, MASS.
In Canada: Northern Electric Co., Ltd., Belleville, Ont.



THE BOX IS POSITIVE
Reduces Human Error

FIRE ENGINEERING

JANUARY, 1954 VOL. 107, NO. 1

With the Editor

Looking Ahead The curtain has rung down on 1953, with its astronomical fire losses. The stage is set for a new year. A nation's fire service wonders what's ahead for it.

Who can prophecy? Certainly we're not oracles but we can faintly discern the patterns and shapes of some of the things that lie ahead.

We see a fire service continuing to fight for its existence, and the lives and properties of those whom it has sworn to protect, in a desperate effort to turn the rising tide of destruction by fire.

We envisage the struggle between that undernourished, under-equipped fire service, and a foe which knows and shows no quarter. It is a life-and-death struggle in which, unfortunately, too many civil servants have, unwittingly perhaps, allied themselves with this enemy, fire, by their continuing failure to arm and strengthen the fire service for its never-ending struggle.

We discern a continuation of the schemes and strategems to cut costs in the fire service, innovations like having police and firemen double in brass; substituting the commercial telephone system for the time-tested municipal fire alarm system; buying sub-standard "home made" apparatus and equipment instead of standard makes and standard values.

We can discern increasing symptoms of misapplied economy in a continuation of the short-crew fire company, which practice bodes no good for either the service or its public. And at the same time we see the fire service saddled with increasing duties of fire prevention and fire protection, with mounting extra-curricular tasks, while the service remains short of personnel and of time to perform and execute these tasks.

But these represent only the debit side of the picture. There's got to be a credit side as well, and here we envisage accelerating progress.

We see the fire service perfecting its strategy and technique of fire suppression, notwithstanding those drawbacks we have conjectured. We see it training and preparing for those extra tasks it will be called upon to perform. We see it growing in stature as the keystone for the nation's civil defense and as the instrument for coping with whatever disasters may befall. We see it building better public good will for itself and the communities it serves.

We contemplate a fire service that shows increasing acceptance of improved methods and materiel. We see speed of attack increased by further addition of such things as respiratory protective equipment; broader use of water fog, fog-foam and wetting agents and improved chemical extinguishing agents; by more scientific use of small lines, water carriers and by substituting mechanical for manual operations.

We envisage still further improvement in forcible entry equipment, and its use. Power tools will be used more widely and effectively. We see such essential operations as ventilation, overhaul and salvage applied far more scientifically. Eradicating post-fire smoke and fume odors will probably find wider application and acceptance. Powered air movers and smoke exhausters will continue to find greater application. Standard apparatus will continue to be refined and improved, as we see it.

Time and space will continue to shorten as communications facilities are further improved. There are radical innovations in fire detection, fire alarm transmission, and built-in extinguishing systems on the drafting board which may prove major steps forward.

No, all is not dark in this picture of tomorrow. As through a glass darkly we can see losses as well as gains made by the fire service. And we confidently expect the rate of gains over losses will continue in the months ahead. The Government promises us insurance against economic recession. About the only critical imponderable is international peace. On this score, not even the wisest of soothsayers would hazard a guess.

Fred Shepard

Fire Education Grows Up In California

By CLIFF DEKTAR

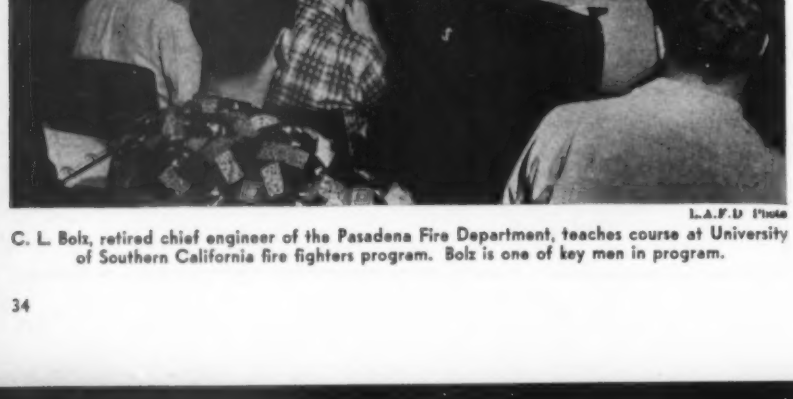
WHEN it came to specialized professional training, firemen long have been considered as educational stepchildren by most American colleges and universities. Although many institutions of higher learning catered to personnel of many other branches of municipal government, few were interested in giving courses at the college level to firemen.

True, a few universities in conjunction with state agencies did conduct regular institutes or seminars for fire fighters, and several, including the Illinois Institute of Technology and Oklahoma A & M had technical training programs with emphasis on fire engineering. A few other schools, including the University of California at Berkeley, featured splendid classes in forestry.

Today, however, a comprehensive professional training program for firemen with full college credit exists at the University of Southern California in Los Angeles. This program places its emphasis on fire administration and instructing students in subjects which will prepare them not for operating a pump on a fire engine—a subject in which they already should be proficient—but for a position of leadership.

L.A.F.D. Photo

Men who have helped to plan and guide University of Southern California's training program for firemen: Left to right—rear, Chief S. H. Edmondson, Chief Frank S. Sandeman, Chief John H. Alderson, Harry A. Marlow, director of SC Civic Center Division. Front—Chief James M. Nellis, Chief William J. Taylor, Dr. John D. Gerletti, Jr., program coordinator. Missing among chiefs is Chief Charles N. Carroll of Santa Monica Fire Department.



L.A.F.D. Photo

C. L. Bolz, retired chief engineer of the Pasadena Fire Department, teaches course at University of Southern California fire fighters program. Bolz is one of key men in program.

At SC, firemen can get that education they have always wanted. Competent instructors from within the fire fighting profession and also from the staff of the university participate in the program.

Since the fall of 1950, the SC program has operated in close cooperation with the Southern California Division of the California Fire Chiefs' Association. The chiefs have been continuously consulted on policy and administration.

The idea for a college training program for fire fighters originated with John H. Alderson, the highly respected and competent chief engineer of the Los Angeles Fire Department for the past 14 years.

"Twenty-five years ago, I started writing, thinking, and talking to my friends about some form of higher education for men who want to make the fire service a career," Alderson explained. "We needed most a program to train supervisors. For many years we didn't do much but talk about the idea, but I discussed the matter with Emery E. Olson, Dean of the SC School of Public Administration. (Dean Olson recently retired to take an executive position in industry.)

"Finally, in the spring of 1950 we had a meeting in my office in Fire Department Headquarters. Dean Olson was there as well as Harry Marlow, head of SC's Civic Center Division, which at the time was running an efficient police training program. Dr. John D. Gerletti, Jr., associate professor of public administration was also there.

"We decided to ask the Southern California Division of the Fire Chiefs to have Olson tell the story of what we had in mind for professional training at the college level for firemen."

Olson spoke to the chiefs and Dr. Gerletti was appointed program coordinator and instructed to rough out a plan. Now working with Gerletti was a committee of the Chiefs' Association headed by Chief William J. Taylor of Burbank. On the committee were Chief Alderson, Chief Charles N. Carrell, Santa Monica; Chief S. H. Edmonson, Pasadena; Chief James M. Nellis, Arcadia; and Chief Frank S. Sandeman, Long Beach.

Dr. Gerletti was a thorough and able educator, but he didn't know very much about firemen, their habits, or their problems. So he decided that before he started planning an overall program for educating the men, he'd better find out what his pupils-to-be were like. With Professor Frank Black he spent three weeks living in local fire stations. The two educators ate with the men. They talked with the men. They found out

what the firemen needed and what they wanted in the way of an education.

"I wasn't a buff," Gerletti smilingly recalls. "I was interested in what the firemen did . . . what the administrative duties of the captains and battalion chiefs were. I wanted to know how firemen cooperated with law enforcement agencies and how law enforcement agencies cooperated with firemen.

"I lived with the men and so did Frank Black . . . we learned to talk their language . . . both of us talked the planned program out at every level from the man on the tailboard right up the line to the chief. Eventually, I think, either Frank or I visited every one of the more than 45 fire departments in sprawling L. A. County."

Then the two educators sat down and started planning the program.

"We didn't write up one course until after we found out what was needed," Gerletti emphasized.

One of the first things Gerletti and the chief's committee did was to set up this basic statement of purpose:

"The Fire Administration program is designed to provide training for firemen beyond that available through local, state, and federal agencies. Emphasis is placed upon the problems of administration rather than upon fire fighting techniques."

First classes were opened on Sept. 18, 1950. Some 60 students were expected, but 185 firemen from 21 municipal fire departments and the Los Angeles County Fire Department showed up.

The program was finally in operation, but improvement was still needed. Gerletti and his staff were not satisfied to stop until the program was the best they could possibly make it.

"Most of our instructors worked tirelessly to give us a good curriculum," Gerletti says. "Retired Pasadena Chief Jimmy Bolz, for example, developed a wonderful basic course in fire administration—one of the pillars of our program.

"In the spring of 1951 we added three more courses and interest in the program kept rising."

Gerletti believes the key to the success of the entire program was the adjustment of the university program to meet the unusual schedule of the fireman. The vivacious educator points out that the same classes are given on two consecutive days so that men who work on both the "A" and "B" shifts can attend. Then the classes are also interchangable. Since the identical class is given on Monday and Tuesday, for example, if a man misses the Monday session he can still catch the one on Tuesday and not miss a thing.

"I think the only reason that such a program failed before and that institutions of higher learning didn't show more interest in training fire fighters, was that the universities really didn't believe for some reason that firemen were capable of going to school," Gerletti says. "To prove to our own university that firemen were capable of learning, we decided to give the scholastic aptitude part of the standard college entrance examination to 250 firemen enrolled in the program.

"The results were amazing! The lowest fireman on the test made a score equal to the average entering college freshman. The average fireman was 20 points better.

"On that basis the university fully accepted the program and it became integrated in our regular curriculum."

So under the expert direction of Gerletti and Black the program has continued to grow. It now offers 33 classes instead of the original six. The curriculum is in a constant state of revision.

Among the courses now offered are introduction to fire administration, advanced fire administration, fire company administration, legal aspects of fire administration, arson investigation, industrial fire hazards, regulations and practices concerning dangerous chemicals, fire insurance, fire prevention administration, fire prevention inspection, tactics and strategy, hydraulics, mathematics, supervisory training, public personnel training, report writing, and public speaking.

Some 350 firemen are now enrolled including 11 candidates for master's degrees.

Students may obtain various goals through the program.

1. Professional advancement through specific courses taken for individual improvement.
2. A certificate in Public Administration with specialization in Fire Administration.
3. A Bachelor of Science Degree with a major in Public Administration and with specialization in Fire Administration.
4. The degrees of Master of Science

L.A.F.D. Photo

Dr. John D. Gerletti, Jr. (left), Chief John H. Alderson (seated), and Chief William J. Taylor talk over University of Southern California's fire fighters training program.

L.A.F.D. Photo

Battalion Chief Mark C. King, L.A. Fire Dept., instructs group of students in University of Southern California fire fighting training program. Chief King is rated as one of best instructors in program, and has developed several excellent courses in dangerous chemicals and fire fighting in heavy industrial areas. He commands 7th Battalion in city's heavy industrial district.

L.A.F.D. Photo

Professor Frank Black (left front) and Dr. John Gerletti, Jr. (left rear of table with glasses on), talk over Fire Administration Training Program with men at Engine 15, L.A.F.D. Both men actually lived in fire stations to learn problems of firemen and what they wanted in the way of an education.

in Public Administration and Doctor of Public Administration with Fire Administration as a field of concentration.

Of course, the fireman-student who wants to obtain a regular degree must take all other courses required by the university such as history, science, government, and English.

So far more than 600 different men have taken classes, with the first students graduating last May. Naturally, most of the students have come from the three largest departments in the area, the Los Angeles City, Los Angeles County, and Long Beach Fire Departments.

But students come from every fire fighting agency in Southern California to attend classes. At least one man drives in from Santa Barbara, 100 miles from L.A., and another from San Diego, 130 miles to the south. Requests for information have come from each of the 48 states, Alaska, Hawaii, Puerto Rico, and 19 foreign countries.

But the university has not confined its program strictly to teaching students in the scheduled classes. In 1951, a fire prevention curriculum workshop was held and the faculty of both the School of Public Administration and School of Education developed the publication, "Fire Prevention for Secondary Schools," published by the International Association of Fire Chiefs. One special course in supervision, human relations, and management, was given for 22 fire chiefs in L.A. County. A similar class was held for chiefs in adjacent Orange County.

Another important factor in the success of the program has been the vast reservoir of competent men from the many fine departments in area to draw qualified instructors from. Many of the instructors, finding no adequate texts existing in their field, have written their own.

However, it has not all been smooth sailing. Many of the men have used their GI educational benefits to pay for their aducation, but many others who did not serve in the armed forces—many because they were deferred as critical personnel—find that they must undergo a severe financial strain to pay the required $19-a-unit tuition.

"At present it is an expensive form of education for a fireman and many men are left out," one instructor commented.

"Sure. I'd like to take some of the courses," one progressive - thinking young captain said. "But, frankly, I've got three kids and can't afford the schooling, not being a veteran."

Gerletti explains that some scholarships now are being made available to firemen in various communities.

"Insurance agents in Burbank, for example," he said, "have made two scholarships available to firemen from their city. Long Beach, Pasadena, and other areas, are cooperating, too. But we need much more assistance of this type."

Gerletti also pointed out that in conjunction with the program an adequate Fire Service Library is now being collected.

"More than $1,000 in cash has already been collected for the library and more contributions are coming," the professor stated. "However, we'll need a total of $10,000 to fully equip the library which will be open to any qualified person wishing to do research in the fire field.

"Many persons have contributed sets of various fire journals which are also valuable. For example, Chief Lloyd Canfield of Beverly Hills donated a complete set of Fire Engineering magazines from 1925 to 1952. FIRE ENGINEERING magazine itself gave a complete set of binders for the magazines."

Chief Alderson, who has continuously given his full support to the program since its inception believes that the new educational plan will eventually change the entire complexion of fire services in the United States.

"I foresee the day 5 or 10 years from now," Alderson stated, "when a man without a degree in fire administration from some university will not be accepted as a fire chief.

Alderson then praised Olson and Gerletti:

"These men have broken a bubble which should have been broken long ago in the field of education for firemen. It is their driving energy which has given the program the impetus it needed to succeed."

Gerletti hastens to point out that although the "bubble has been broken" in Southern California, there is still a critical need for establishment of similar programs throughout the United States.

"I have attended a lot of regional chief's meetings and the IAFC Convention and the enthusiasm and interest shown by the many men I have met there is amazing," the modest professor points out.

"Some day I hope to see other universities model similar programs after ours and only then will I know that the professional advancement of the fire fighter will be assured."

Fire education has grown up in California!

(Dr. Gerletti has been granted a year's leave of absence from his position as Coordinator of the Fire Training Program and Associate Professor of Public Administration to become General Manager of the International Association of Fire Chiefs with headquarters in New York City. His work will be divided among other members of the staff of the School of Public Administration until his return.)

Firemen Restore $2,300 to Owners

Fire Commissioner Michael J. Corrigan of the Chicago Fire Department has received a report of "extraordinary service rendered by firemen of the fifth division in line of duty."

Chief Thomas Bradbury, Marshal of the Fifth Division, reported the episode concerned a fire in a six-flat frame building at 8312 Buffalo Ave., at 7:45 P.M., Dec. 1, last, which spread so fast that occupants had to flee without trying to salvage personal belongings.

When firemen of the Fifth responded on a box alarm, Chief Bradbury called for help as the fire threatened to get out of control, and as occupants and neighbors watched in tears and hysteria while flames swept through the building. Several bemoaned sums of money left behind them in their precipitate flight.

Firemen Edward Hunter of Squad 5 found an envelope containing $1,065; Lt. Martin Mulhall of Engine 87 recovered two sums of $880 and $355. Members of Ladder 49 found a wrist watch and diamond ring.

The $2300 and jewelry were turned over to Chief Bradbury, who asked the help of Chief Frank Tinney of the Fire Insurance Patrol and Lieut. Joseph Harper, of the Patrol's Squad 3, in returning the valuables to the proper owners.

The water-soaked money was dried out on a makeshift rack and counted. Then residents of the building were asked to name the amounts they had lost and the type container used for it. On this basis the "commission" of fire officers gave $1,065 to Mrs. C. Nawakowski; the $880 to Mrs. E. Konopiski and the $355 to Mary Konopiski. The jewelry was returned to its owner.

When "Solid" Fire Streams Are Not Solid

By LT. COMDR. H. S. MORTON

A common conception we have may be completely shattered by disclosures resulting from engineering tests. This is well illustrated in the case of "solid" fire streams, which through experimentation by a well qualified engineer have been exposed as anything but solid.

Lieutenant Commander Henry S. Morton, U. S. N., who has sound fire protection and hydraulic backgrounds, decided to make a thorough study of fire streams and the numerous factors which have a bearing on the quality of such streams. In his work he had available the well-equipped facilities of the University of Washington hydraulics laboratory.

The larger part of a year was devoted to this project, and a fund of highly interesting and instructive information on nozzles and fire streams was the result of his research and experimentation.

Through the cooperation and courtesy of Commander Morton, we are privileged to make available to our readers the fund of information which he has amassed, and of which the data and photographs reproduced below represent but a small part. Of particular interest are the photographs of fire stream structure at different distances from the nozzle.—Editor.

To provide the perfect, ideal, solid fire stream, certain hydraulic characteristics must be developed and adhered to. The hypothetical case of the ideal stream may be considered to occur in a short, free jet of water discharging from an undisturbed supply source through a sharp edge orifice. The resulting flow remains in the laminar flow region across the orifice opening, and is not materially affected by the force of gravity or air resistance. However, approaching the problem from the practical standpoint, certain features must be borrowed from both laminar and turbulent flow to establish the perfect stream. The ideal stream must have the following features:

a. Particle paths must all move in parallel planes and maintain the same energy content.

b. The velocity of each particle moving must be the same, hence the velocity profile of the stream is evenly distributed.

c. The force of gravity must not interfere with the stream until the effective range has been reached.

d. Air resistance must not interfere with the solid stream until the effective range has been reached.

Therefore, a stream can be considered to be flowing in the perfect state if the path of all the particles (velocity filaments) moves parallel to the axis of the stream, the particles contain the same quantity of energy and velocity, and the stream is not influenced by external forces or air resistance. Unfortunately the above conditions have never been fulfilled or even remotely approached in hydraulic practice.

Although many turbulent jets appear to flow with the particle filaments in parallel planes, eddy currents and turbulence are not visible to the eye, but they are still present. It may be observed under the polarized lighting conditions

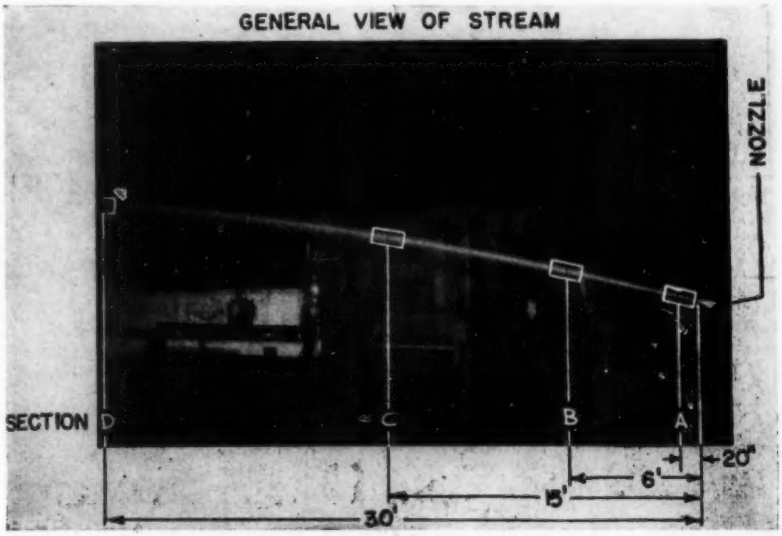


Fig. 1. This looks like a "solid" fire stream; but it is far from being solid, as Figures 2, 3 and 4 show. The stream was produced by a nozzle, which, of many tested, gave the stream of greatest range and continuity.

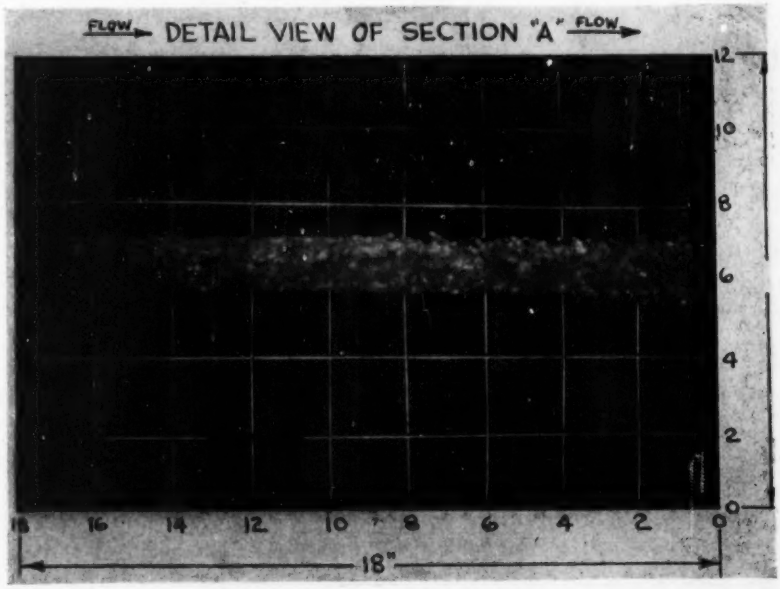


Fig. 2. Here's an 18-inch section of the stream, photographed at a point 20 inches from the nozzle. This 18-inch section is included in the panel on the stream shown at "A" in Fig. 1.

that eddies and turbulence are present in pipes and therefore can be considered to exist in the approach section of the nozzle, since the physical structures are materially the same.

Additional Consideration Involving Free Jets and Streams

All water contains a certain amount of air or gas. To provide flow, energy must be added to the hydraulic system, hence energy in the form of potential and kinetic, are involved in all systems where flow occurs. Therefore, both the gas and liquid particles are considered to be in compression in the fluid to which the energy is added. As the fluid passes the exit of the conduit, the potential energy approaches a zero value, and expansion of both the liquid and gas particles takes place. This expansion of the liquid and gas tends to increase the cross-sectional area of the stream. An excellent example of this is observed in utilizing the air-foam nozzle, in which the air and liquid solution mix and expand upon leaving the exit sections of the conduit.

The Influence of Air Resistance on the Growth and Decay of Solid Streams

It is difficult to define, in every-day terms, the phenomena that affect solid stream growth and decay. As observed in the photographs herewith, streams develop erratic waves which may be defined as successive ridges with the intervening troughs which advance in undulatory motion. It is extremely difficult to take accurate measurements, or to analyze the complex contours of this motion at any given moment, due to the continual change of the stream shape. The stream presents itself to the onlooker as a steady, solid volume of water flowing with a definite trajectory, but in observing the photographs it may be noted that there is a definite series of irregular crests and troughs which advance and change shape in an unending succession of motions, depending on the speed of the liquid mass.

As the stream leaves the nozzle exit, tiny ripples are created in the stream surface, which increase in size and shape as the distance from the nozzle exit increases. As the wave motion increases, it is agitated by additional air eddy currents and gravitational and internal forces which, in term, cause decay of the stream. The stream is broken down into individual liquid masses which continually break up into small particles and droplets as the stream expends its energy. Owing to the extreme mobility of water, there is constant agitation developed which upsets even the smallest and smoothest jets. There are evidently two distinct types of motion which are combined in producing instability and wave motion in solid streams. It is felt that air eddy currents, created by the oscillatory motion of the water particles of the stream, act in such a manner as to apply unbalanced pressures on the stream body, causing wave motion of the solid stream. The movements of the turbulent water particles within the stream further agitate the liquid mass and continually assist the air eddy currents in accelerating erratic wave motion. It is the opinion of the writer that the water particles do not have a definite orbit or period within the stream body, but that the water particle maintains an erratic path traveling at random. It is further felt that the eddy currents in the air press upon the liquid surface more strongly in some places and less strongly in others, which is partially responsible for the depressions and elevations within the stream body. The smallest ripples, which are produced at the exit of the nozzle, are known as capillary waves, and they are created by the turbulence in the jet and surface tension of the water, and are not affected by the force of gravity. As the distance from the nozzle exit increases, these ripples or capillary waves increase in size and are transformed into undulated waves which have definite crests and troughs in the liquid mass.

A high-speed stream creates increased air drag and air eddies which create more erratic wave motion. The wave motion will continue to gain in both frequency and speed as the distance from the nozzle increases, and eventually the entire stream will decay into independent liquid masses and then into droplets of fluid.

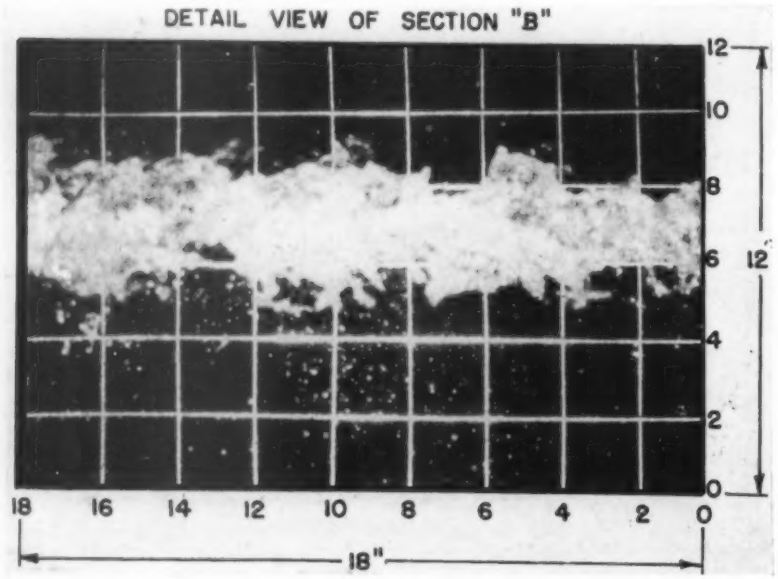


Fig. 3. At "B" (Fig. 1), 5 feet from the nozzle, the "solid" stream looks like this.

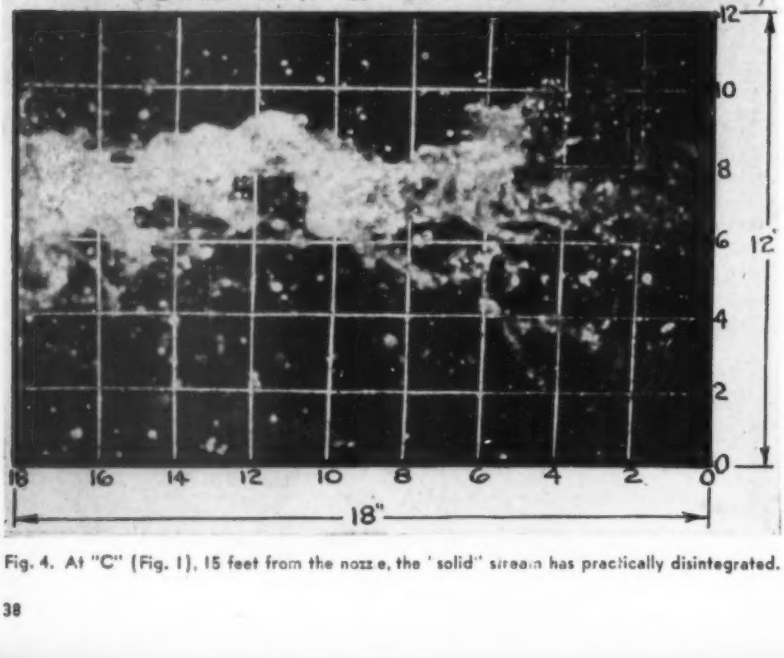


Fig. 4. At "C" (Fig. 1), 15 feet from the nozzle, the "solid" stream has practically disintegrated.

Higher Losses in 1954?

At the rate of destruction maintained in 1953, fire losses in this country in 1954 should exceed $1 billion, according to authorities. These losses, we are told, will reflect the nation's growth and its expanding national economy, which should continue practically unabated, throughout 1954.

As in previous years, the main bulwark against rising losses is the nation's fire service.

Fire Service Ventilation in Principle and Practice

Part III—Hazards of Improper Ventilation

By ROI B. WOOLLEY
Assistant Editor

Part I of this study of ventilation as applied to fire suppression and rescue reviewed the broad fundamental purposes, requirements and limitations of modern ventilation.

Part II embraced the combustion and behavior of fire—heat, smoke and gases, the products of combustion, including smoke explosions and backdrafts.

In the following chapter the author scrutinizes ventilation from the negative, or unfavorable, viewpoint, with emphasis on its hazards and ill-effects upon the public, and the fire service itself.

Upon completion of the series, proper acknowledgement of their assistance will be given to those individuals and sources from which the author has drawn inspiration and assistance.

WE have said that ventilation is only one factor in fire suppression. But it is a most important factor, and upon it may well depend the success or failure of the entire fire control and extinguishment—yes, and the rescue, operations.

Errors and omissions by the fire service have no place in today's fire extinguishment. In the saving of life and property from consuming fire, attack and defense operations cannot be left to chance or guesswork. And of all those factors with which the firefighter must contend in coping with any such operations, that of efficient ventilation calls for the most painstaking and scientific study and evaluation, and most deliberate action. That is because ill-conceived, ill-timed, and poorly-completed ventilation practices can have such immediate and far-reaching repercussions upon both the fire service and the public at large.

This may seem self-evident, but the author annunciates it because, as has been pointed out, many students of fire suppression fail to realize the importance of ventilation in modern scientific fire control, and the responsibility of the fire forces to know and apply the principles of scientific ventilation to their vocation.

Inasmuch as the fire department, paid or volunteer, municipal or 'private', assumes the responsibility for the protection of life and property from fire, once a fire emergency arises involving both life and property, it becomes an obligation to that fire force to meet the emergency and prevent its magnification by any wrongly conceived and executed actions on its part.

It must be admitted that it is not always easy to determine just what is right or wrong ventilation practice. Men on a line attempting to "hit the fire" may blame their failure to do so upon the failure of a ladder company to open up somewhere. Conversely, members of a ladder company attempting to ventilate a structure may be driven from their position by premature operating of hose lines.

There are many different factors in the complete ventilation operation. Any one of a number of things can go wrong. It is the responsibility of the fire fighter to see that these different factors are studied, and synchronized, not with a view to placing the blame for poorly executed ventilation, or lack of any ventilation, but in order for a department to measure up to its responsibilities to do an adequate, if not superlative job of fire suppression.

Many experienced fire officers believe that "no ventilation is better than improper ventilation"; in other words, poorly planned and executed ventilation may have worse reactions by hazarding life and property than if no ventilation were attempted.

It must further be admitted that many things can go wrong in planning and carrying out ventilation practices. No officer or fireman responsible for venting an involved building or area can hope to have at his fingertips all the essential information upon which to formulate his plans and actions. In ventilation, as we have said earlier, time is of the essence. An officer may be forced to make snap judgment to reach quick conclusions,

Fire in storage room of big Dallas, Tex., department store gives off heavy smoke that prevented firemen coming to grips with blaze. Smoke damage was also suffered by exposures.

and take quick action, especially if life is involved. Yet, even under these conditions, his study of and training in, the field of ventilation should reduce to the minimum the element of chance and of error.

Premature Ventilation

It is established that improper ventilation can be hazardous to life and property. Ranking high on the list of ventilation ills is premature ventilation.

The hurried, thoughtless efforts to expose the seat of the fire may so further the opportunities for the extension of the fire that it may well take on conflagration proportions.

Premature ventilation is usually due to lack of command and direction and/or misapplied energy. It is a symptom, if not the direct result, of lack of organization and control. It therefore is perhaps more to be expected in the volunteer fire department than in the more integrated, closely controlled, paid organizations, where operations are more regimented and executed.

A contributing factor to this kind of ventilation, or lack of ventilation, is taking action before proper size-up. Ventilation is begun without consideration of the location and extent of the fire, of the nature of building and contents, the exposures, and the fire fighting forces at hand for coping with the situation.

The question arises, should time be taken for the gathering and evaluation of this information before making any attack on the fire? The answer to this is "yes." Misapplied ventilation efforts cannot be recalled or corrected, and the outcome may be far more costly than the brief time consumed in the size-up.

It is well to consider than in the average fire, unless the lives of occupants are at stake, the same natural causes that created the fire condition are holding it until firemen can control them. In other words, unless the fire has already vented itself in some way (in which case, naturally, the ventilation problem is not so serious and, we repeat, unless there is immediate life hazard—the delay of a few moments in organizing the attack on the fire and of planning the ventilation operation is not too vital. At this stage of the procedures, haste can indeed make waste.

Another failing which comes under the heading of premature ventilating is opening up before adequate help is at hand.

There may be situations on the fire ground where it is wise to commence ventilating without waiting for the proverbial "covering charged line" but these are the exception and not the rule. Roof top ventilation, such as opening bulkheads and skylights, may be undertaken without covering hose lines, some fire officers believe. They maintain that only when exposures are at risk should opening up be delayed for covering hose streams. The contention is that the delay in opening up at the top of a structure, such as a multiple dwelling, where there are shafts or other vertical arteries, can not only stymie interior fire attack, but it may have fatal results by preventing rescue of trapped persons. Therefore, they make it a practice to start top level ventilation immediately, without waiting for any protective hose lines, except as said, where such ventilation would knowingly imperil other property. At the same time, they order the engine and hose companies to press the attack without delay on the assumption that by the time they can stretch in and are ready for water, the laddermen will have commenced their ventilation. This is where team work and coordination of effort come in.

As stated, the only exception in this procedure is where the top or other ventilation will endanger lives or property, or where the building may be so charged with gases and smoke that an explosion may be imminent. Normally, venting at points remote from the place where hosemen and others are advancing to attack the heart of the fire does not result in "backdrafts," but it may. The risk is always present, at the point of ventilation and of entry of fire fighting crews.

From the evidence at hand, the safest and most efficient procedure for ventilating a structure is for the venting operations to precede, or be synchronized with, the advance of the attacking forces. The latter may have a few moments of punishment, until the effects of ventilation begin to be felt, but if they have respiratory protective equipment, they will save precious time in hitting the fire and cutting it off by not delaying their advance until they have evidence that the ventilation has begun.

The particular evil to which we refer in this chapter, i.e., ventilating too soon and before adequate help is at hand, has to do primarily with opening up *before* the rest of the fire fighting team is in position to operate—in other words, the promiscuous smashing of windows or doors by first arriving firemen to "let out the smoke"—even though no rescues are necessary,—and before hose lines are ready for operation. This kind of venting may be all that is needed to provide a slow smoldering fire with just the stimulation it requires in the form of oxygen, to start that fire "off to the races." It may also mean the trapping of personnel endeavoring to escape. Thus the breaking of a window on an outside fire escape, before a hose line is ready for covering operation, may result in such a fast involvement of the floor of the structure that flames will be lapping out of the window, driving the fire fighters off the fire escape, and closing it as an avenue of escape and a vantage point for fighting the fire by the time the line would be ready to go into action.

By waiting until "adequate help" is available, is meant personnel and equipment. Lack of personnel arriving with the first due companies, as is generally the case today, creates a serious problem of coordinating ventilation and fire attack. Two man can vent a roof faster and better than one man. Four men can do a better job than two, depending upon the type of ventilating to be done.

Usually the building charged with smoke and gases must be vented in more

An explosion of pent-up gases has just blasted out part of this New York warehouse, killing two firemen, injuring many others. Rabbit-warrens of cubicles, loaded with combustibles and lack of openings, make it practically impossible to ventilate such structures.

than a single place, which is another reason for the "full crews" on ladder companies. Short handed engine companies have their hands full stretching in without attempting to open up as well; many of them have to attempt both today because limited personnel makes it impossible to get adequate teamwork between engine and ladder companies. Where help is available, it is a practice in many departments to divide up ladder crews, sending some to open up above or at other designated points, and other crewmen to accompany hose crews to assist them in opening up for their advance, and aiding in the movement of hose lines.

A final, if minor detail, on the problem of premature ventilating: Rigidly restrict ventilating to members of the fire service. The eager, excited citizen who so often falls all over himself to lend a helping hand, has a passion for breaking windows, sometimes with disastrous results to fire fighting operations.

Efficient ventilation can best be accomplished where there is discipline and order.

Venting in the Wrong Place

We have stressed inefficiency due to undue haste in opening up or ventilating at the wrong time. Another form of inefficiency is venting in the wrong place.

Here, again, a sufficient delay in operations to permit adequate sizeup should indicate where best to begin ventilating. And here, again, we have evidence of the wisdom of fire officers and crews knowing their buildings and occupancies. The broader that knowledge by "all hands," the faster the attack and the less punishment for the crews, because there need be little delay in opening up to pave the way for the extinguishing force.

Where a building is charged throughout with smoke and no fire showing, it is difficult to know just where the seat of the fire is, and the best place or places to begin ventilating. True, the practice generally is to start at the top, but lack of knowledge of the building's construction may send short crews to the roof to open up. This is particularly so when there are practically no vents, no bulkheads or shaft covers, and where cutting the roof would not help because there may be no vertical channels for smoke escape.

Ineffective ventilation may result from officers being misled by apparent smoke conditions; smoke may be emitting at points considerably remote from the fire. Bad weather, and darkness, may create deceptive smoke conditions; or fire officers may get incorrect information about what's burning, and where, from an occupant of the structure. This frequently happens when an excited person spreads the rumor that someone is trapped within the smoke-filled structure. It is easy under these conditions to order premature ventilation, and to open up at a wrong spot.

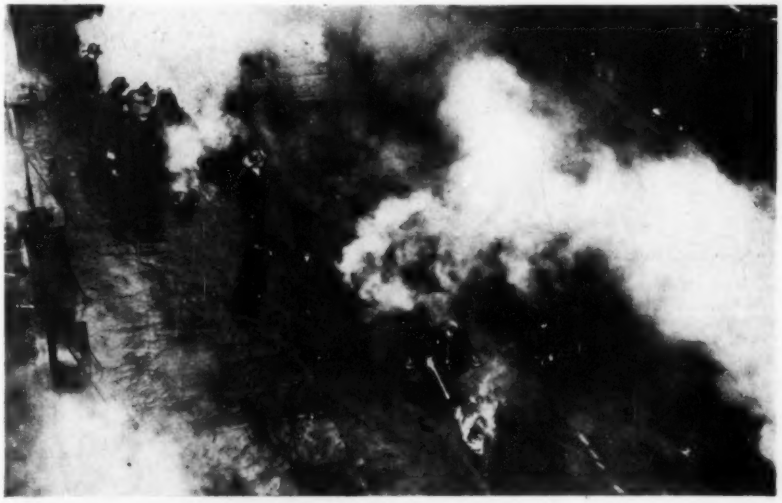
In considering places to ventilate, it is well to remember that there are six sides to every fire, the front, rear, two sides, and top and bottom. Just as most fires are different, so too must ventilating practices differ with the structure, the occupancy, the extent of the fire, and other details we have already recounted. This again emphasizes the importance of size-up. Top ventilation may be called for, but exposure conditions may not be favorable for it; rear, or lateral, ventiating may be the answer. In the case of basement and sub-basement fires, street level ventilation may be the only kind possible, using power driven air movers if they are available. Ventilation to be effective must be tailored to fit the conditions. The experienced officer does not begin ventilating operations until he knows he is tapping the right locations—top, side, front or rear—to most quickly and safely rid the involved structure of its accumulated smoke and gases.

Ventilating Without Considering After Effects

There is an old axiom to the effect that a fireman entering a smoke-filled building should always locate a secondary means of exit or escape. In opening up a building, the officer in charge of ventilation should look beyond the immediate effects of his operations. He should ask himself what would happen, should conditions suddenly change? Before he decides on top ventilation, has he weighed the possible advantages of lateral venting? What would happen should the leeward side suddenly become the windward side?

Fire force ventilation is something like a game of chess. The winner usually is the player who sees farthest ahead, and who anticipates his opponent's moves, and who makes his own moves accordingly.

The officer experienced in ventilation is not motivated by expediency; he makes no move toward opening up if he is at all uncertain about the fire's location, extent and travel. Until he has some knowledge of these details, and then only after he has weighed the possible effects of his opening up



Officer sizes up possible hazardous effects of roof ventilation on adjoining exposure. No covering line is discernable as fireman in foreground cuts roof while his mates in rear remove scuttle farthest from exposure building.

Incomplete ventilation may result when smoke and gas conditions frustrate crews in opening up. Employment of breathing devices, as used by these New York City firemen operating at a smoky drug store fire, may prevent lost time, wasted effort, needless damage to property and injuries to personnel.

Press accounts of this fire said: "Exceptionally heavy smoke on all three floors of this home forced firemen to chop through walls, windows and roof to fight the fire." Here's one fire fighter opening a window by breaking the glass. Other firemen are opening up the roof.

Photo by P. M. Cronin

Prompt removal of a skylight at rooftop drew off choking smoke, permitted enginemen to reach this night club fire. But double roof construction made other top venting difficult. The man on the street seldom witnesses this phase of ventilation.

in the light of such imponderables as exposures, weather and so on, does he proceed.

This doesn't mean that he must have a "check-list" of all these imponderables before him in making his decisions. Experience and training will enable him to almost automatically weigh all the factors and reach quick decisions.

Incomplete Ventilation—Half-Way Job May Be Worse Than None

Throughout this text we have repeatedly referred to adequate ventilation. What is "adequate"? Just how complete and far-reaching should ventilation be?

It is about as difficult to answer this question as it was for Abe Lincoln to answer the query "how long should a soldier's legs be?" You may recollect he said they should be long enough to reach from the man's body to the ground. Well, adequate ventilation should be that which does the job—which removes smoke and gases so that the fire may be reached and extinguished, with the minimum of damage to building and contents by the fire and its products of combustion. Incomplete ventilation is too often inadequate ventilation, and inadequate ventilation may mean extension of the fire, undue punishment to fire fighters, and greater loss of life and property.

Inadequate ventilation is handmaiden to lack of size-up. It may also be due to shortage of manpower and other facilities to do the right kind of a job. But whatever the cause, the results can be damaging.

Perhaps a recital of a recent example of what may be termed inadequate ventilation will illustrate the point we are trying to make. Not long after 2½-in. fog nozzles were introduced to crews of a few engine companies in a certain large city, one of the companies was called to fight a fire in a sub-basement of a skyscraper. The below-street levels were heavily charged with smoke, and the men were unable to reach the fire (the company carried no breathing apparatus).

At this juncture, the officer in charge, who had been studying fog-nozzles, but who had never had opportunity to use one, bethought himself of the new nozzle back on the rig, and ordered his men to replace the control nozzle with it, and again try to make the sub basement, behind a protecting fog pattern.

This was done, and to everybody's gratification—at first—the men were able to work in on the fire floor and were hitting the blaze when suddenly they found themselves almost entirely surrounded by fire. Only hasty retreat got them out without serious injury.

Nobody had informed this particular officer, or his crew, that a fully charged 2½-in. line, under pressure, operating a fog-nozzle delivering better than 200 gallons per minute, in a heavy fog pattern, will consume a lot of BTU's, but that one vital essential is needed—an opening or vent, through which the smoke and gases of combustion may be driven. In this case, incomplete and inadequate ventilation almost put an entire crew in the hospital.

Experienced fire officers agree that ventilation must be "tailor made." There is no yardstick and no set procedure that fits all cases, all operations.

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KANSAS CITY FIRE DEPARTMENT TRAINS FOR INSIDE FIRE FIGHTING

Respiratory Protective Equipment Provided for Personnel; Training in Its Use Stressed

CLOUDS of yellow smoke were pouring from the first floor of a building in downtown Kansas City, Missouri, when firemen arrived. The first officer inside diagnosed the situation quickly and well. His order, as he returned outside, was "Masks!"

A total of 19 firemen donned gas masks to fight the stubborn blaze in a false wooden floor beneath a concrete floor. But the fire was extinguished with minimum damage, and not a single fireman was put out of action by the dense smoke.

A few years ago, the story of that fire might have had a different, perhaps tragic, ending. In 1940, only two of every eight Kansas City firemen knew how to use a gas mask. And when one of them did, he was considered a "sissy."

Since then, under Director of Fire Francis "Brick" Wornall and his staff, the Kansas City Fire Department has been developed into one of the country's outstanding fire-fighting organizations.

Training and retraining, together with standardization of company and individual fire-fighting practices and evolutions, are some of the factors which have brought the 500-member Kansas City department to its present high state of efficiency.

When Director Wornall took over the job in 1940, one of his first moves was to request the National Board of Fire Underwriters to make a comprehensive survey of the department. Results of the survey confirmed officially what nearly everyone had known: that lack of training had undermined morale, efficiency and discipline in the department.

It was considered imperative, said Director Wornall, that a training school be organized immediately. Three instructors were selected. They were men who had sincere interest in the fire service and the development of the department. After progressing through the fundamentals of fire-fighting practices, they proceeded into all phases of the more advanced company evolutions. Then, an intensive officer-training program was instituted. It was believed to be one of the first of its kind in the country, and was intended to develop qualities of leadership in company commanders. All company officers were awarded "instructor's training certificates" from the University of Missouri.

The training school has done considerably more than train rookies. Every Kansas City fireman continuously is in training, not only at his own station house under the direction of company officers, but at the training school as well. A daily average of six of the city's 40 fire companies report at regular intervals to the training school along with their apparatus. There, they are put through drills in all phases of fire fighting.

Drillmaster Glen R. Eikenbury emphasized that it makes little difference how long a fireman has been in service—he needs constant practice to keep in shape, both mentally and physically.

All firemen are graded, by company instructors and by the drillmaster, on ability and knowledge in the use of equipment — ropes, life nets, ladders, hose, etc. In addition, they are graded for qualities of leadership and discipline. These grades play an important part in an individual's advancement in the department and are kept as permanent records in the files which are considered by the City Personnel Department when qualifying eligible candidates for promotions.

An important subject in the training of all Kansas City firemen is the use of gas masks. With this training there has developed throughout the department a new concept about gas masks. The old tradition that "a good fireman has to be able to eat smoke," has vaporized in Kansas City. Now, firemen take no chances—and the result has been greater fire-fighting efficiency.

As expressed by one of the younger officers, Captain Emmett Schmitt of No. 1 Truck Company: "There's no sense taking all that punishment from smoke when you have a mask to wear."

Captain Schmitt explained that most fires cannot be knocked down quickly from the outside. They have to be stopped from the inside. And, getting inside and staying there until the job is done takes a gas mask.

Captain Roy Brown, also of No. 1 Company, explained that when he joined the department in 1937 most firemen wouldn't wear masks, mainly because they did not know how to use them properly.

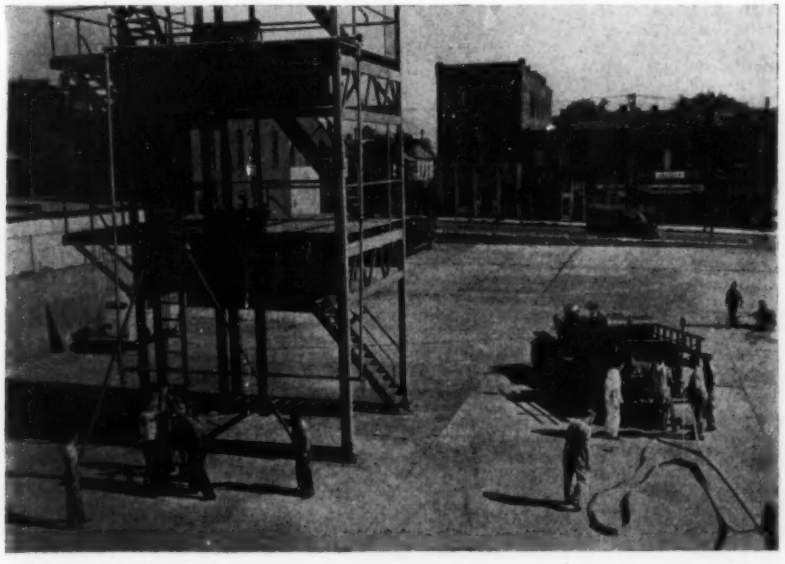
Today, the Kansas City department has standardized on two types of masks. One is the All-Service mask, carried on all pumpers, and the other is the self-contained Chemox breathing apparatus, carried on all truck companies and by all deputy and battalion chiefs. Both are canister-type masks.

The Chemox is used when the atmosphere may be deficient in oxygen or contain high concentrations of harmful gases or vapors, for it generates its own supply of oxygen. The All-Service mask provides protection against limited concentrations of carbon monoxide, smoke and the other gases commonly encountered during a fire.

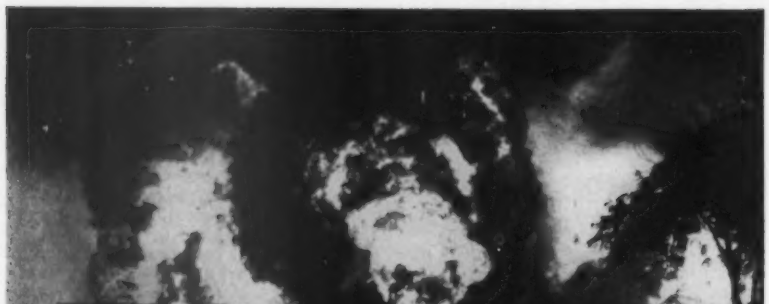
At the training school, mask instruction begins with a detailed lecture on every component part of the equipment and the technical aspects of construction and operation. The instructor also

(*Continued on page 72*)

Realistic training in use of breathing apparatus by rookie Kansas City firemen takes place in this "Smoke House" at the training school.



At the Kansas City Fire Department's Training School, all firemen—rookies and veterans alike—go through drills in every phase of fire fighting. A daily average of six of the city's 40 fire companies report to the school, with their apparatus, at regular intervals.



The driver of a truck was killed when the truck and a gasoline tanker came together on a highway near Tracy, Calif., on October 17, 1953.

CONTROLLING THE HAZARDS IN TRANSPORTATION OF FLAMMABLES

Final Installment of the Sympos'um Which Has Been Appearing Since the September Issue

Lester Barker
Fire Marshal
Eugene, Ore.

We have no control over trucks hauling flammable liquids if trucks bear license of approval of the Interstate Commerce Commission. Explosives are covered by the National Board of Fire Underwriters "Suggested Fire Prevention Ordinance," 1947 edition.

At the present time we have not designated specified routes for trucks hauling flammable liquids or materials.

We have not had any accidents involving tank trucks.

I believe the National Fire Protection Association's Regulatory Standards for tank vehicles for flammable liquids should be adopted on a state level.

Bernard J. Padgett
Chief, Fire Department
Alexandria, Va.

We have a code covering the movement of trucks carrying flammable liquids, explosives, etc., but cannot enforce it if we don't know when they are passing through.

I believe Federal regulation of these trucks is the answer to the problem.

Donald S. Charles
Chief, Fire Department
Charlotte, N. C.

The transportation of flammable liquids, explosives and other hazardous materials is restricted to designated truck routes. Local retail deliveries of gasoline are covered by ordinances regulating tank truck capacity and operational procedures.

We have not had any fires resulting from accidents involving tank trucks.

When possible, all vehicles transporting flammable liquids, explosives, or other hazardous materials in interstate operations should by-pass all thickly populated areas.

Old ordinances covering local operations should be revised to include hazards brought about by present day activities and a closer liaison with representatives of the industry should be established to develop and maintain a strong program of education for personnel, inspection of equipment and enforcement of all regulations.

C. C. Styron
Chief, Fire Department
Atlanta, Ga.

All trucks used for the transportation of flammable liquids in bulk quantity exceeding 100 gallons must be inspected by the Chief of the Bureau of Fire Prevention and, unless certified by him as to their compliance with the ordinance, they may not be operated on the streets of Atlanta. This does not apply to trucks bearing the license of approval of the Interstate Commerce Commission or the State Highway Department or to trucks transporting flammable liquids in drums, cans, and other containers of less than 60 gallons individual capacity.

No truck transporting flammable liquids in bulk may be left unattended on any street, highway, avenue or alley, provided that this will not prevent a driver from the necessary absence from the truck in connection with the delivery of his load, except during actual discharge of the liquid when responsible person must be present at the vehicle.

No truck transporting flammable liquids in bulk may be driven inside the fire limits except when making delivery to points within such area. Trucks containing flammable liquids may be parked in open parking lots or on private property, but not closer than 75 feet, except while making delivery, to any place of public assembly or other building in which people sleep. They may not be parked or garaged in buildings other than those specifically approved for such storage by the Chief of the Bureau of Fire Prevention.

No person may transport or carry any explosive in or upon any public conveyance which is carrying passengers for hire.

Every vehicle, while carrying explosives, must have painted on its front, sides and back, in easily legible letters at least four inches high, in contrasting colors, the word "Explosives," or in lieu thereof must display, in such manner that it will be visible from all directions, a red flag with the word "DANGER" printed, stamped or sewn thereon in white letters. Such flag must be at least twenty-four inches square and the letters thereon must be at least six inches high.

No person in charge of a vehicle containing such explosive may smoke in or upon such vehicle, drive the vehicle while intoxicated, drive the vehicle or conduct himself in a careless or reckless manner, load or unload such vehicle in careless manner or while smoking or intoxicated.

No person may place or carry in the bed or body, or cause to be placed or carried in the bed or body, of any vehicle containing such explosives, any metal tool or other piece of metal, or any matches.

It is prohibited for any reason to place or carry or cause to be placed or carried, in any vehicle containing explosives, any exploders, detonators, blasting caps or other similar explosive material.

The permit for transporting explosives designates the time when and whereon the same may be transported.

We haven't had any accidents involving tank trucks.

I believe the travel speed of these trucks should be restricted and the deliveries limited to reasonable hours when traffic is lightest.

Charles E. Lane
Chief, Fire Department
Great Falls, Mont.

We have no control of tank trucks as yet. We are working with the traffic commission to establish a truck route around the city. We have adopted the suggested fire prevention code of the National Board of Fire Underwriters which gives us some jurisdiction over the trucks delivering gasoline to filling stations.

We have had no accidents with tank trucks so far.

I think that some route should be specified for the operation of this kind of hauling. It should be presented to the haulers with the request for their cooperation.

Abel S. Eldridge
Chief, Fire Department
Newport, R. I.

The fire department specifies the streets trucks carrying flammable liquids, explosives and other hazardous materials should travel, and also the time of their movement.

We have not had any fires or catastrophies resulting from accidents involving these trucks.

During World Wars I and II, much

(*Continued on page 72*)

Heavy Loss in Cannery Fire

A huge column of black smoke, visible for 20 miles, signalized the destruction of two "Cannery Row" plants in Monterey, Calif., Sunday, October 25th, resulting in a property loss of $400,000.

Almost totally destroyed were the plants of the Sea Beach Canning Co. and the Custom House Packing Corp. A third plant, that of Carmel Packing Co., was seriously threatened by flames but damage was confined to charred roof timbers. Some 30 guests of the three-story Ocean View Hotel were evacuated but the wooden structure, to the west or windward side of the fire, was saved.

The fire started in an upstairs warehouse at the Sea Beach plant from an unknown cause. The alarm was received at 3:48 P.M. from the automatic signal system in the cannery. Within minutes the flames roared back from the front of the building to the rear, a distance of 200 feet. There were 18,000 fiber and paper cartons and large stocks of labels in the storage room, which fed the flames.

From the Sea Beach plant the flames quickly communicated to the Custom House Cannery, next door. The Sea Beach plant was fully equipped and ready to operate but had not packed, due to the shortage of fish. It was valued at over $300,000. The Custom House Cannery, once valued at $400,000, was not equipped, the machinery having been sold a year ago.

Nine Peninsula Fire companies and the Monterey fireboat responded to the general alarm, pouring over 9,000 gallons of water per minute in the hour-long fight to control the raging blaze. One hundred and ten men, including a Navy detachment, were on the fire lines during the struggle.

The cloud of smoke, and the spread of the news about the fire, brought a crowd of 3,000 spectators, requiring extra police from Monterey and the Pacific Grove departments to control them.

The efforts of the firemen were successful in confining the threatening blaze to the two cannery plants but fears were expressed early in the fire that the entire area, with its many wooden buildings, would be involved.

November Fire Losses

Estimated fire losses in the United States during November amounted to $68,064,000, it was reported by the National Board of Fire Underwriters.

According to Mr. Lewis A. Vincent, NBFU's general manager, this $68,064,000 loss represents an increase of 4.5 per cent over losses of $65,129,000 reported for November, 1952, and a decrease of 0.7 per cent from losses of $68,551,000 for October (1953).

Losses for the first eleven months of 1953 now total $819,960,000, an increase of 15.3 per cent over the first eleven months of 1952, when they amounted to $710,826,000.

These estimated losses include an allowance for uninsured and unreported losses.

Photos by William L. Morgan

Monterey Fire (from top to bottom):
Fire six minutes after alarm was turned in. Fire about twenty minutes after alarm. Fireboat W. E. Parker goes into action. Exceptionally low tide hindered it.

Five Chicago Firemen Killed

Five firemen and a civilian were killed and 24 other firemen were injured, some critically, when a portion of the old three-story brick joist Reliance Hotel, at 1700-04 Madison Street, collapsed early December 18th, only minutes after a three-alarm (3-11) fire had been struck out. The civilian died in the fire; the firefighters were all caught in the crash, as they were searching for other victims of the fire.

The dead are Fire Captain Nicholas Schmidt, Engine Co. 107 and Firemen George Malik, Engine 31; Robert Jordan, Ladder 2; Robert Shaack, Ladder 19; John Jarose, Engine 31. The citizen, John Tabor, was a former inmate of Manteno State Hospital. It is believed he may have started the fire.

The firemen victims were among members of the department on the roof and second and third floors of the building when the interior of the west portion collapsed, plummeting them into huge piles of debris. Fellow firemen worked frantically in the frigid temperatures to rescue their mates, and succeeded in pulling out many injured. Because of the threat of further collapse, bricks and debris were passed out of the wreckage from hand to hand in an endless chain.

Ten minutes after Anthony J. Mullaney, assistant fire commissioner, ordered all firemen to leave the wreckage, fearing they might be caught in another collapse, a large part of the roof caved in and fell where many rescuers had been working moments before.

The fire itself routed 75 occupants of the hotel's 45 rooms, many fleeing in their night clothes. The dead civilian, Tabor, had only recently been discharged from the institution as "improved." County records disclosed that in the last decade he had been let out of Manteno five times, and had escaped four times.

Tabor, investigators were told, checked into the hotel at 10 P. M. the 16th, disappeared for four hours and returned intoxicated about 2:00 A. M. The fire started at 2:22 A. M. In his clothes was a note in which he apparently wrote that he had "only killed 15 people. I also set fire to 12 apartment buildings." His body was found in the area believed to be where the blaze started.

The collapse of the building started when a steel beam slipped from supporting posts, according to Chief James E. Collins of the fire prevention bureau, who said the heat of the fire apparently expanded the beam, and it slipped when it contracted as it cooled.

About five firemen were on the roof when this portion of the structure gave way. More than 25 firemen were on the second and third floors. Most of them were buried under varying quantities of debris. The five men on the roof reportedly "rode down" atop the debris and, although cut and bruised, scrambled to safety.

Immediately about 100 firemen started digging to reach their fellows. Physicians crawled into the ruins to administer hypodermic injections. It was more than six hours after the collapse that Mullaney ordered the men out. Then a power shovel was used, after it was determined that there was virtually no hope that the last two missing men could be alive.

The building was 70 x 80 feet in size with stores on the first floor. It was built in 1885.

Chicago firemen clear away debris in search of fellow fire fighters who were trapped in the collapse of a Chicago Skid Row hotel after a fire. Nine firemen were rescued alive.

Toronto Seeks C.D. Firemen

Toronto's Air Marshal, T. A. Lawrence, C. D. director for the City of Toronto and Torks has called for volunteers to train as auxiliary Firemen for Civil Defense. They are to give one night per week for emergency training and they are to report to any of the 12 fire stations in the Metropolitan area. All volunteers must be over 35 years of age and pass a suitable medical test. Those who pass will be inducted into the corps of auxiliary fire fighters, but will receive no salary. They will, however, be eligible for compensation through the Workmen's Compensation Board for injury or death resulting from civil defense.

They will also receive a free issue of clothing and helmets. Volunteers are preferred who live and work within a reasonable distance of the local fire stations.

The auxiliary corps has already been provided with one civil defense pumper, and three more are expected. The course given the members will cover atomic defense and fire fighting but will not cover salvage operations, use of inhalators or first aid.

The organization has completed training of 20 instructors for the auxiliary corps.

The major problem facing metropolitan Toronto's civil defense planners is lack of auxiliary water supplies, Mr. Lawrence pointed out. Supported by experts from Toronto's fire department, the civil defence chief has asked for the installation of a new underground water system which would remain immune to any large scale attack on Toronto. As the experts see it, 16 independent pipe lines feeding up to Bloor St. and Danforth Ave., at points one mile apart would give the area adequate protection in the event of an atomic attack.

The planners also report that the destruction of the John St. pumping plant and the fire departments high pressure system would leave Toronto without water. Under the plan they have submitted to the Toronto and York civil defense committees, supplies of water would be available even if a number of the independent lines were knocked out.

JOHN KARL LEE

Treating Radioactivity Contamination

"An unnoticed spill of radioactivity can cause severe contamination of personnel and physical facilities," it was learned recently by the U. S. Naval Radiological Defense Laboratory when it was called upon for aid after a glass capsule containing 40.3 milligrams of radium sulphate was stepped on in a student laboratory during a training exercise using radiation detection instruments.

Sixteen hours after the spill, U.S.N.R. D.L. personnel found wide-spread contamination of the building and the students' hands, clothing and possessions. The building was sealed and no decontamination procedures were applied until the more urgent problem of students' contamination was controlled.

A number of the students had microgram quantities of radium on their hands (a microgram is one-millionth of a gram and represents practically an invisible quantity of material). Routine scrub-

(*Continued on page 71*)

Mystery in Chemical Blast

An air of mystery surrounds the destruction of a building of the Lucidol Division, Novadel-Agene Corp., at 1740 Military Road, Town of Tonawanda, N. Y., on September 23rd last.

Following four violent explosions, and ensuing fire, which brought death to 13 and injuries to at least 37 others, the ruins had hardly cooled before several separate investigations were begun by the company, by an insurance carrier, an explosives expert, and by representatives of the National Board of Fire Underwriters.

Sitting in on the first conference on the 24th were Buffalo's Fire Commissioner Harold R. Becker, who is also Erie County Fire Coordinator; Chief Elmer C. Mang of the Town of Tonawanda; John W. Penniston, representative of the National Board of Fire Underwriters and John P. Wargo, chief of the Sheridan Park Volunteer Fire Company in whose district the disaster occurred and whose men were first at the scene. Following this meeting, numerous other consultations were held and, while several different theories have been advanced as to the probable cause of the destructive blasts, no substantiating evidence has been released to this date.

The scene of the first explosion, which was clocked at 11:18 A.M., was the 100-ft.-long, two-story brick building "C" of the Lucidol plant, located on the New York Central main line to Niagara Falls, about 200 feet east of Military Road. Successive blasts were timed at 11:20; 11:40 and 11:45.

The plant, which reportedly was used for the production of peroxides, was reduced to debris, much of which was scattered over a wide radius, with heavy damage inflicted on dwellings nearby, including the extensive Sheridan-Parkside Project. Some of the debris landed in the yard of the Western Electric Co., about a mile from the scene of the explosions.

The first company to respond was the Sheridan Park Volunteer Fire Company under Fire Chief John P. Wargo, who immediately transmitted a general alarm after sizing up the extent of the disaster. This brought aid from Kenilworth, Brighton, Kenmore, Ellwood and Grand Island. Tonawanda fire companies stood by at Sheridan Hose Company hall. Seven ambulances rushed to the scene from as far away as Lackawanna.

Homes and business places in a four-mile area were rocked by explosions and many startled residents, noting the cloud shaped like an atomic bomb blast which hovered over the plant, believed the area was the victim of an enemy atomic bombing.

Power and telephone lines were disrupted and persons seeking aid had to walk several blocks to reach workable telephones. Outside the plant itself, the bulk of the damage was done to homes on Crane Place Court, which is separated from the blasted building by only a few feet. A six-family house and two two-family dwellings were destroyed, as was another two-family house in the neighborhood. Most of the other dwellings suffered broken windows, fallen plaster, and damaged furnishings. A 50-gallon steel drum, apparently hurled more than 100 yards, was tilted crazily on the roof of one house.

Fire fighters wetting down shattered remains of Lucidol Building "C," Tonawanda, N. Y., which disintegrated, following series of explosions on September 23, killing 13 and injuring 37. Cause remains a mystery.

In response of other emergency services, police, public works, medical and civil defense to call for help was rapid and efficient although these forces, and fire fighters, encountered various delays due to the rush of sightseers who jammed the roads to the scene. Extra police and sheriffs later managed to shut off the access roads, but even then, the morbidly curious swarmed into the area. Both the American Red Cross and the Salvation Army dispatched mobile canteens and crews to the site.

Firemen quickly controlled the flames in the wrecked plant and doused all exposures including Building D, a 300-foot structure which was badly burned, while others turned their attention to searching for the dead and injured. The shattering force of the blasts made it impossible to immediately identify most of the victims and it was difficult to quickly gather any comprehensive picture of the total casualties. Over 20 casualties were taken to Kenmore Mercy Hospital alone.

The volunteer fire fighters received credit for their attack on the fire in the face of possible additional explosions of materials in storage in the plant. Kenilworth Fire Chief Francis X. Koch, a member of the Erie County Fire Advisory Board, said the men stood to it like soldiers in the face of acid fumes.

At one time there were firemen trapped on Building D, with acid boiling all around them, but they stuck it out.

Faced with total wreckage of the Building C, firemen and others were unable to even hazard a guess at the cause of the disaster. Elwood Fire Chief James P. Reidy said, "Right now there just isn't any way for us to know." Cecil Pettit, Fire Chief and assistant foreman at the Lucidol plant, who was hospitalized from injuries received in rescue work and fighting the fire following the first explosion, said he believed the cause of the explosion never would be known. He had left building C only a few minutes before the blast, after making a routine visit. He said employes in the building were all chemical operators with years of experience. He reported that construction workers also were in the building, one of whom was killed and others injured.

F.D.I.C. Program Completed

Tentative program for the 26th annual Fire Department Instructors Conference, to be held in Memphis, February 23 through 26, 1954, was completed December 7th and 8th, at a meeting of FDIC's 25-member programming committee, Chairman Richard E. Vernor, manager, Fire Prevention Department of Western Actuarial Bureau, Chicago, announced recently.

Among the subjects slated for the 1954 conference are actual tests in fire fighting, using high pressure water fog by so-called "indirect" application; role of the fire service in tornado disasters; industrial protection problems, including a diagnosis of the great General Motors fire at Livonia, Michigan; latest developments in fire control during atomic attacks; and numerous items on fire department operation and personnel training.

Chairman Vernor said that the 1954 program included four very colorful stage demonstrations. A series of new fire department evolutions will be demonstrated at the Memphis Fire Department drill tower during part of one afternoon session, he said.

Names of program speakers, he continued, will be announced in the latter part of January.

The Conference is sponsored by the Fire Prevention Department of the Western Actuarial Bureau and the Memphis Fire Department, John C. Klinck, Chief. Annually, this "national fire service conference" brings to Memphis, from all parts of the United States and Canada, key fire department leaders, educators from colleges and universities, fire and plant protection engineers, public officials, and representatives of the fire insurance industry for a four-day forum on modern fire service problems.

Last year the Conference drew 1,512 persons from 39 states, District of Columbia and Canada.

Phoned Alarm Causes Mixup

A misunderstanding over a telephoned alarm caused some delay in firemen getting to work on a serious fire in Windsor, Hants County, Nova Scotia, on Oct. 6th, last.

The fire, which made three families homeless and badly damaged three business establishments, started in the Wrixon Apartments on King street. A tenant living in the building telephoned the department, which responded with most of its equipment to what is known by firemen as the Wrixon Block. One pumper went direct to the fire, fortunately, and the other equipment made a quick turn-around when the error became known and, although handicapped by traffic congestion, made their way to the King street location.

The blaze started from an undetermined cause in the basement and spread vertically between the walls, breaking out above a false ceiling on the second floor.

According to Fire Chief Walter Stephens, the oil-fed fire was a stubborn one to fight. Although the blaze in the basement and ground floor were soon brought under control, fire fighters had their work cut out for them on the second floor where an exploding oil drum fed the flames.

Local firemen, aided by the Curry's Corner detachment, which responded following the general alarm, operated seven hose lines on the structure, two from King street, two from the top of the Newcombe apartment house adjoining on King street, and three from Water street (two of these latter were later shifted to the top of the Lynch Block).

The building involved was erected in 1914 and later remodeled into four ground-floor offices and stores and three upstairs apartments.

Loss was estimated at $40,000.

Windsor, N. S., fire at its height.

Novel Training Program for Volunteers at Kenmore

A volunteer firemen's training program, intensive and unique for a town of 20,000, is in successful operation at Kenmore, N. Y., under the supervision of Fire Marshal Raymond J. Kirsch.

Believing that a fire company is only as good as its equipment and training, the Kenmore Volunteer Fire Department holds two intensive drill periods each year. Men successfully completing the first year course and passing written final examinations are issued Third Class Fireman certificates. Training continues until First Class Certificates are earned at the end of the third year.

Men reaching the rank of First Class Fireman are eligible for election to Lieutenant and promotion to Captain, Second Assistant Chief, First Assistant Chief and Chief. This promotion system gives each man four years' experience as an officer before taking over top duties in the company. Ex-officers return to the ranks and are required, along with all members of the company, to take a refresher training course every three years.

The Kenmore training program has been in operation, with varying modifications, since 1927, and according to Fire Marshal Kirsch, has resulted in efficient personnel thoroughly acquainted with the latest developments and methods in fire fighting techniques.

A modernization program designed to provide Kenmore volunteers with up-to-date fire fighting equipment has resulted in complete replacement of old apparatus with Ward LaFrance equipment during the past five years. Newest addition is a high pressure 1000 gallon pumper with foam making equipment. The Department also owns another 1000 gallon pumper and a quadruple combination, both of the same make.

The Kenmore Volunteer Fire Department is a member of the Erie County Defense Organization, responding to calls anywhere within the county, and of the Town of Tonawanda Firemen's Association, participating in its mutual aid system.

The Kenmore Volunteer Fire Department has three modern pumpers. In only five years time, the department has completely replaced old apparatus with the equipment shown here.

Rookie Firemen Injured in Training

Two Cambridge, Mass., firemen, Paul J. Girard and William Dilworth, both rookies, were badly injured in a fall during probationary training at the Brookline, Mass., Fire Department's drill tower, on Dec. 8th, last, when a rope snapped as they were practicing emergency descent.

The two firemen, who joined the department only six weeks previously, landed on a macadam strip at the base of the drill tower. Girard received fractures of the left elbow, left wrist, left shoulder and pelvis, when he fell about 35 feet. Dilworth sustained a twisted left ankle and bruised shoulder in a 10-foot fall.

The accident happened after a ladder had been run up to the fourth story of the six-story tower. Over an upper rung of the ladder a rope was looped, one end hanging to the ground, the other resting against the rungs and held at the end by other firemen. Both men had been instructed to leap out one of the lower windows onto the rope and allow themselves to be lowered to the ground.

Dilworth already was on the rope when Girard made his jump from a third-story window. When he hit a loop in the rope intended for his foot, the line above him snapped and both men fell. Girard's fall was partially deflected when he brushed Dilworth's shoulder. Both were rushed to the Peter Bent Brigham Hospital, where Girard's condition was listed as critical.

New Haven Register Photo

A fire captain was killed, a deputy chief was critically injured, and eight others, including six firemen, were injured at New Haven, Conn., December 15, when a fire pumper and a deputy chief's car collided while answering an alarm of fire. After collision both pieces of apparatus rammed other cars in the area. Above photo shows pumper of Engine 4 wedged between building at right, and a utility pole. One of the civilian's cars is in the forefront, and rear of deputy chief's car is just visible at left.

Fire Officer Killed in Apparatus Crash

One fire captain was killed, a deputy chief was injured critically, and eight other persons, both firemen and civilians, were hurt at New Haven, Conn., on Dec. 15 in a spectacular traffic pile-up resulting from a crash of a fire pumper and the deputy chief's car.

The accident, considered the worst of its kind in the history of the New Haven Fire Department, occurred at Grand Avenue and East Street while both pieces of apparatus were enroute to a minor blaze in the plant of the National Folding Box Company, about five blocks away.

Captain Edward Turbert, 53, of Engine 4, was killed. Deputy Chief George Lynch, 57, was injured critically. Others injured in the crash were Fireman Ernest Collins, 54, driver for Deputy Chief Lynch; Joseph Collis, 42, a civilian, Fireman John Reardon, 28, of Engine 4; Fireman John Gannon, 34, of Engine 4; Fireman John Michael Cummings, 45, driver of Engine 4; Mrs. Olga Collis, 38, and Mrs. Eva Hunt, 33.

Fire Department officials said that Engine 4, with Capt. Turbert and three other firefighters aboard, was proceeding east on Grand Avenue. Deputy Chief Lynch's car, driven by Fireman Ernest Collins, was traveling north in East Street. The machines rammed each other at the intersection, then slammed into three private cars in Grand Avenue, east of East Street. The fire pumper finally crashed into a florist shop after striking a utility pole.

Capt. Turbert, who had been sitting next to Fireman Michael Cummings, driver of No. 4 pumper, was thrown from his seat and pinned between the running board of the apparatus and the utility pole. Apparently killed instantly, he was pronounced dead on arrival in St. Raphael's Hospital.

Deputy Chief Lynch was crushed in his auto. Rushed to St. Raphael's Hospital, it was found he was suffering from lung and chest injuries, and several fractured ribs.

All available ambulances, a total of six vehicles, went to the scene as soon as the seriousness of the accident was known. Some of the ambulances made double trips, carrying the injured to hospitals.

Mayor William C. Celentano and Fire Chief Paul P. Heinz were also called to the intersection. Also on hand were Dr. Karl Bretzfelder, a member of the New Haven Board of Fire Surgeons; Frank Dahill, President of the Board of Fire Commissioners, and Commissioner Henry Balsamo.

Capt. Turbert, a member of the Fire Department for 28 years, had a wide acquaintance among firemen elsewhere in Connecticut. He was President of the Connecticut State Firemen's Association in 1952. At the time of his death he was a member of the Association's Legislative Committee, and treasurer of the New Haven Firemen's Association.

TOM MAGNER.

Factory Fire Threatens E. Toledo

A fast, hot fire, which destroyed the 2-story plant of Industrial Finishers, Inc., an enameling firm at 651 Miami St., East Toledo, Ohio, gave 45 Toledo fire fighters summoned by two alarms and two special calls a busy time, and threatened to spread throughout the neighborhood.

The plant, which was about a block long, was of brick joist construction and had been added onto a large frame building erected in 1875. The company employed from 50 to 75 persons and baked enamel on steel parts.

It closed down at 10:00 P.M., the night of the fire, Nov. 11th last. The first alarm was sounded at 11:41 P.M., after discovery by a neighbor that the plant was in flames. Ewald Bode, deputy fire chief, called for a second alarm immediately upon his arrival and, later, two additional pumpers were special called, as the fire threatened an eight-block area.

Firemen were hampered by low water pressure, but the crews were able to bring 10 hose streams to bear upon the blazing plant, and nearby exposures. In addition, two pumpers were assigned to cruise about the neighborhood to douse the embers which showered over properties. The brands carried on the wind, started small fires at four dwellings but these were quickly controlled. Other fires were caught in their incipiency by householders who were out in force with garden hoses. Police evacuated occupants of threatened apartment building on Neise Ave. a short distance away.

The collapse of three of the four walls of the factory shot sparks and blazing embers high in the air and the flames were visible for miles. The glare of the fire and movement of apparatus brought the usual crowds of spectators.

The cause of the blaze is not known. Chief Bode estimated the total loss at $75,000. The fire was declared under control at 2:22 A.M.

Gesturing fireman yells a warning as a fire hose bursts during a three-hour battle to control a multiple alarm fire that raged through a Philadelphia, Pa., paint plant November 10th last. Flaming volatile liquids, which floated down thoroughfare, atop water from hose (visible in background), imperilled both hose and firemen. One fireman was injured when a 500-gallon tank of paint thinner exploded; fifteen others were treated for minor injuries.

Report on Fund-Matching Purchases of Fire Equipment

The table below, recently released by the Federal Civil Defense Administration, Washington, D. C., shows a summary of major items of fire equipment purchased under the Federal-State matching funds program for the years 1952 and 1953.

It will be noted that a total of 1,321 pumpers were procured for use in continental United States; 434 portable pumps; 324 portable generators; 2,099,443 feet of 2½-inch hose and 671,219 feet of 1½-inch hose.

The above represents only such equipment as was procured in cooperation with the Fire Division of the Federal Civil Defense Administration. Communications and rescue equipment were handled by other divisions of the F. C. D. A.

FIRE SERVICES PROGRAM

FEDERAL-STATE MATCHING FUNDS PROGRAM

Major Items of Equipment Provided for with Funds Obligated Through June 30, 1953 *
By FCDA Region and By State

Based on current assumptions, it is estimated that the number of pumpers required in event of attack is approximately 8,100 above peacetime strength. The 1,373 pumpers for which matching funds have been made available through June 30, 1953, will make up for about 17 percent of this deficit.

REGION & STATE	PUMPERS			PORTABLE PUMPS			PORTABLE GENERATORS			2 1/2" HOSE - FEET			1 1/2" HOSE - FEET		
	TOTAL	1953	1952	TOTAL	1953	1952	TOTAL	1953	1952	TOTAL	1953	1952	TOTAL	1953	1952
U. S. & Terr. & Poss.	1,373	968	405	434	242	192	324	309	15	2,139,243	1,498,488	640,755	685,019	474,569	210,450
Cont. United States	1,321	938	383	434	242	192	324	309	15	2,099,443	1,463,488	635,955	671,219	462,169	289,050
REGION 1	378	259	119	32	32	0	23	19	4	578,250	380,950	197,300	124,500	82,900	41,600
Connecticut	15	11	4	1	1	0	3	3	0	23,800	15,600	8,200	5,500	3,700	1,800
Maine	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Massachusetts	32	17	15	5	5	0	4	4	0	52,600	26,500	26,100	26,600	12,200	14,400
New Hampshire	0	0	0	0	0	0	0	0	0	200	0	200	0	0	0
New Jersey	77	49	28	3	3	0	0	0	0	67,450	55,450	12,000	23,700	22,300	1,400
New York	233	172	61	15	15	0	16	12*	4	412,900	269,100	143,800	57,700	34,600	23,100
Rhode Island	13	7	6	0	0	0	0	0	0	8,150	4,150	4,000	2,500	2,100	400
Vermont	3	3	0	8	8	0	0	0	0	13,150	10,150	3,000	8,500	8,000	500
REGION 2	360	266	94	223	113	110	121	112	9	573,700	384,150	189,550	224,720	154,720	70,000
Delaware	32	31	1	13	12	1	18	18	0	31,000	31,000	0	19,300	19,300	0
Dist. of Columbia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kentucky	10	7	3	0	0	0	1	1	0	21,500	9,500	12,000	7,700	3,300	4,400
Maryland	3	2	1	100	0	100	17	17	0	48,200	11,000	37,200	16,500	1,500	15,000
Ohio	72	37	35	6	6	0	10	10	0	85,400	55,200	30,200	31,900	19,500	12,400
Pennsylvania	228	177	51	99	90	9	69	61	8	333,350	232,650	100,700	126,720	92,320	34,400
Virginia	15	12	3	5	5	0	6	5	1	54,250	44,800	9,450	22,600	18,800	3,800
West Virginia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REGION 3	69	59	10	1	1	0	5	5	0	152,750	121,550	31,200	42,100	34,600	7,500
Alabama	18	15	3	0	0	0	0	0	0	27,700	16,000	11,700	3,300	0	3,300
Florida	0	0	0	0	0	0	0	0	0	3,000	1,500	1,500	2,200	1,000	1,200
Georgia	19	19	0	0	0	0	3	3	0	62,200	62,200	0	19,100	19,100	0
Mississippi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Carolina	0	0	0	1	1	0	0	0	0	10,600	10,600	0	5,700	5,700	0
South Carolina	0	0	0	0	0	0	0	0	0	3,000	0	3,000	1,000	0	1,000
Tennessee	32	25	7	0	0	0	2	2	0	46,250	31,250	15,000	10,800	8,800	2,000
REGION 4	210	143	67	70	37	33	17	17	0	177,250	132,600	44,650	46,650	41,450	5,200
Illinois	120	96	24	10	9	1	11	11	0	91,050	76,800	14,250	21,700	17,900	3,800
Indiana	28	27	1	5	5	0	2	2	0	14,900	14,900	0	6,100	6,100	0
Iowa	4	4	0	0	0	0	0	0	0	7,000	6,000	1,000	3,500	3,000	500
Michigan	30	14	16	34	3	31	4	4	0	40,100	24,100	16,000	14,450	14,450	0
Minnesota	25	2	23	20	20	0	0	0	0	20,000	10,800	9,200	0	0	0
North Dakota	1	0	1	0	0	0	0	0	0	2,200	0	2,200	400	0	400
South Dakota	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wisconsin	2	0	2	1	0	1	0	0	0	2,000	0	2,000	500	0	500
REGION 5	46	38	8	12	12	0	12	12	0	128,988	102,188	26,800	44,049	33,949	10,100
Arkansas	1	1	0	0	0	0	1	1	0	10,000	10,000	0	3,000	3,000	0
Louisiana	24	18	6	1	1	0	4	4	0	43,800	18,000	25,800	15,300	5,900	9,400
New Mexico	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oklahoma	4	4	0	6	6	0	4	4	0	42,388	42,388	0	14,499	14,499	0
Texas	17	15	2	5	5	0	3	3	0	32,800	31,800	1,000	11,250	10,550	700
REGION 6	39	25	14	56	10	46	10	8	2	134,055	81,800	52,255	43,750	14,800	28,950
Colorado	4	1	3	0	0	0	0	0	0	6,900	1,900	5,000	2,900	1,400	1,500
Kansas	8	7	1	52	9	43	4	4	0	39,805	21,200	18,605	27,300	7,900	19,400
Missouri	26	17	9	2	1	1	6	4	2	77,800	58,700	19,100	9,400	5,500	3,900
Nebraska	1	0	1	2	0	2	0	0	0	9,550	0	9,550	4,150	0	4,150
Wyoming	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REGION 7	219	148	71	40	37	3	136	136	0	354,450	260,250	94,200	145,450	99,750	45,700
Arizona	0	0	0	0	0	0	0	0	0	4,150	4,150	0	1,400	1,400	0
California	189	126	63	17	14	3	128	128	0	272,600	203,000	69,600	107,600	75,000	32,600
Idaho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Montana	0	0	0	10	10	0	0	0	0	2,800	2,200	600	3,000	3,000	0
Nevada	1	0	1	0	0	0	0	0	0	4,000	0	4,000	0	0	0
Oregon	10	8	2	4	4	0	6	6	0	25,900	15,900	10,000	21,500	10,400	11,100
Utah	0	0	0	6	6	0	0	0	0	4,600	2,600	2,000	1,700	1,300	400
Washington	19	14	5	3	3	0	2	2	0	40,400	32,400	8,000	10,250	8,650	1,600
OUTSIDE CONT. UNITED STATES	52	30	22	0	0	0	0	0	0	39,800	35,000	4,800	13,800	12,400	1,400
Alaska	30	9	21	0	0	0	0	0	0	4,800	0	4,800	1,400	0	1,400
American Samoa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Canal Zone Gov't.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Guam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hawaii	1	1	0	0	0	0	0	0	0	2,000	2,000	0	400	400	0
Puerto Rico	21	20	1	0	0	0	0	0	0	33,000	33,000	0	12,000	12,000	0
Virgin Islands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

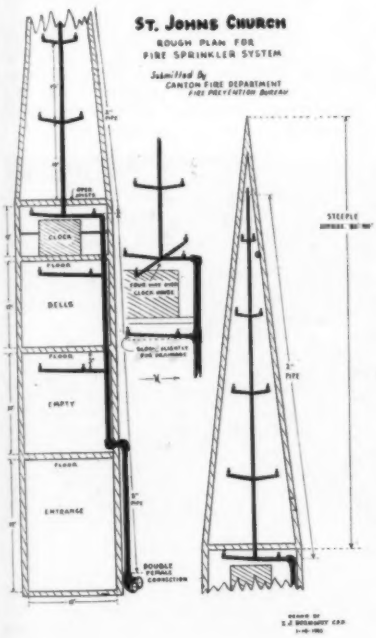
***Total Federal share $9,347,651; includes major items of fire services equipment purchased under both Fire Services and Training and Education matching funds programs; excludes minor items of fire services equipment such as ladders, nozzles, connections, and fire extinguishers in the amount of $886,264, Federal share only.**

Short Cuts and Gadgets

CHURCH STEEPLE PROTECTION

For many years fire chiefs and fire protection engineers have come forth with ideas to fire-safe that frequent and costly fire-breeder, the church steeple. Some of these ideas were predicated upon the use of sprinklers. But thus far, no single idea has had very general acceptance. And still churches burn, from the steeple down.

One of the fire chiefs who has refused to be discouraged by failure of the fire service to reach some sort of solution is Chief William H. Rosche of Canton, Ohio. He has come up with a simple system which ought to be possible of installation by any religious body that has wisdom enough to appreciate the hazards presented by the majority of church steeples.



The accompanying diagram gives details. The plan calls for a three-inch pipe riser extending vertically outside the structure to the first floor, where it is taken inside and up through all floors to the very tip of the steeple interior. Sprinkler heads are placed to cover all exposures and the 3-in. intake and riser, with the gradually tapered supply pipe supplied by two 2½-in. lines, should provide ample discharge to cover all interiors.

Chief Rosche believes that the size of the riser pipe could be reduced to one-inch for the last 25 feet of the spire. The feeder lines as well as the sprinkler heads can be changed and rearranged to meet individual requirements of each installation. In Canton, the plan is to have all sprinkler heads fused except the top three, which would be open heads. The department has tested heads with 100 and 125 degree deflectors and found that they are not suitable for the top sprinkler head. At present they are endeavoring to get a head with an 85 deg. deflector for the top riser, but if these are not available, Chief Rosche says they will enlarge the holes in deflectors of the sprinkler head which seems to afford adequate coverage.

Chief Rosche believes other chiefs might like to kick this idea around a little and by so doing might come up with something constructive. He is sure of one thing, however: if all the church with combustible steeples had this sort of built-in fire protection system, the fire loss in the religious occupational classification would show a marked trend downward during the years to come.

* * *

PUBLIC UTILITY COOPERATION

This isn't exactly a "Short Cut" but it goes far beyond mere news and, we believe, rates space in this column as a valuable tip for municipal fire fighters. We lift the message from a letter to the Editor from Francis A. Yandell, Kirkwood, Mo., who writes:

"I have an item of interest to the fire service which you may believe has merit insofar as it relates to problems facing fire departments called to emergencies arising from fallen wires and electrical fires."

Mr. Yandell goes on to say he is not speaking so much for himself as he is for an associate of the Union Electric Company, St. Louis, Russell Stoecher, where both of them have been employed for over 28 years—Mr. Yandell as trouble dispatcher and his sidekick as supervisor in charge of dispatchers.

The point of the story is that for many years Mr. Stoecher has, of his own volition, undertaken the task of visiting each one of the city's 42 engine houses twice, for the purpose of relating the dangers of fallen wires, the handling of electrocution cases, the problem of moisture in its relation to electrical conductivity, and so on.

Of course this has been done with the tacit approval of the top brass, which has fully appreciated the wisdom of a more than cursory electrical training for fire fighters.

Mr. Stoecher supports his presentations with excellent colored slides portraying all types of overhead line construction, as well as pictures of the interiors of many of the Union Electric Co's automatic substations. He uses the slides to explain the method of voltage identification by the type of construction on any particular pole, or by the construction in a substation.

Mr. Stoecher puts on an illustrated lecture of about two hours duration. Inasmuch as the fire department operates on a 24-hour-on and 24-hour-off system, it is necessary for Mr. Stoecher to visit each firehouse a second time to contact both shifts. After his demonstration and lecture, he has a question period in which the members of the department have a chance to fire questions and debate details. The interest of the men in this part of the session provides ample testimony to their approval of the program, and the benefit they derive from it.

What is further interesting is the fact that Mr. Stoecher has done about 75 per cent of this educational work on his own time. It is also worth noting that whereas the project was prompted by a number of incidents in the fire department in which not only was fire apparatus damaged, but the lives of men endangered as well, there have been no such recurrences, or any one injured, since Mr. Stoecher inaugurated his program.

When you figure there are approximately 1,000 men in the St. Louis Fire Department, most of whom meet electrical emergencies of one kind or another at some time in their career, and that most of the active fire fighters in their operations run the risk of shock and other injury due to fallen wires, short circuits or gounded voltage, it would appear that this "advanced" electrical training course is well worth while.

Our contributor concludes: "Although we (Union Electric Co.) have a fire alarm register in our office, our men cannot get to a fire as quickly as the fire department, therefore knowledge of what to do when electrical equipment is involved until the public service personnel can get to the scene is important. In this respect the training given by Mr. Stoecher is invaluable." And we might add—it would seem to be worth while for all local electrical utilities to go and do likewise.

* * *

FOR A TIGHT AXE HANDLE

An axe handle can be kept tight by dipping the head end in thick paint after it is fitted. The handle is then driven into the head and wedged.

IOWA FIRE SCHOOL BULLETIN

* * *

LET'S GET ACQUAINTED

The Cherokee (Iowa) Fire Department makes a practice of having one of the other fire departments in the county attend its regular meetings. The visiting town brings half of its members, and the next time it is invited, the other half goes. At the meetings the visiting firemen are entertained and served refreshments. This is a good way to get acquainted with your neighboring firemen.

(From the Iowa State College Bulletin Fire Service Information, July, 1952)

* * *

CARD INDEX FOR EACH FIRE BOX

The Baltimore Fire Department maintains a card index system for every fire alarm box. On the back of every one of the cards there is a map drawn showing the proper route to each one of those boxes. Thus in case the nearest companies are out to a fire, the next nearest pick it up and all they have to do is to look at the diagram on the back of the card before they start.

The cards enable the officer or driver of the closest company going in to that box to take the most direct route. It acquaints all companies responding to that particular location as to the shortest routes and therefore should tend to reduce traffic confusion. It also makes it easier for re-locating companies to find a box in the district they are temporarily covering.

EASTERN ASSOCIATION OF FIRE CHIEFS PROCEEDINGS.

News of the Manufacturers

International Distributors Appointed for Unox

The Unox Company, a division of McFarland Manufacturing Corporation of Houston, Texas, has been appointed exclusive distributors in the United States and abroad for Unox, according to an announcement received from Carbide and Carbon Chemicals Company, a division of Union Carbide and Carbons Corporation.

Lee L. Bowman

The Unox Company has also announced that Lee L. Bowman, formerly with Texas Automatic Sprinkler Company, has joined the Company as sales representative with headquarters in Dallas, Texas. In addition to his sales work, Mr. Bowman will assist in the establishment of an extensive dealer organization throughout the United States.

Mr. Bowman is well known for his work with agencies and associations concerned with fire protection and fire prevention. He has been very active in working with the Texas State Firemen's Training program, particularly in the formation of their schooling programs and has appeared as instructor and speaker at many of their school sessions. He has taken an active part in the development of a training program for the proper use of wetter water, the newest and most effective means for general fire fighting.

In 1951 Mr. Bowman was on the program of the Fire Department Instructors' Conference, held in Memphis, Tennessee. Mr. Bowman has also taken part in the Oklahoma and Louisiana Firemen's training programs and has worked with the Cotton Ginners' Association of Texas, appearing before them on numerous occasions to discuss fire safety and plan more effective ways and means of fire protection for gins and warehouses. In addition, Mr. Bowman has worked closely with the Fire Insurance Commission of Texas toward improving fire protection methods and the subsequent betterment of insurance rates where adequate fire protection is provided.

Mr. Bowman became interested in the use of wetter water as a fire-fighting agent almost as soon as Unox Penetrant was available for converting ordinary water into wetter water. Crusading for better fire protection and equipment he strongly promoted the use of Unox by fire departments and industries. His interest in Unox and its effectiveness as a fire-fighting agent by converting ordinary water into wetter water led to his search for proper equipment for the use of wetter water. He was an originator of the idea to construct special pressurized equipment for using wetter water, which equipment was perfected and is now being manufactured by McFarland Manufacturing Corporation. He also participated in developing wetter water emulsion to extinguish particularly flammable liquids and also to protect structures from exposure fires.

The Unox Company, a division of McFarland Manufacturing Corporation, as exclusive distributors of Unox, is preparing an intensive sales program on Unox, as well as the McFarland Wetter Water Fire Wagons, Duggan Proportioners and Unox In-Line Proportioners, all of which have been designed specifically for the use of wetter water in fire protection and fire prevention.

Ahrens-Fox Expands

Ahrens-Fox, Inc., Cincinnati, Ohio, recently announced that its production capacity has more than tripled by the addition of new manufacturing facilities.

Arrangements, completed in November, have been made for the manufacture of Ahrens-Fox apparatus, both custom and commercial types, in Sidney, Ohio.

The Service and Parts departments of the company are to be greatly expanded, utilizing the Cincinnati plant as headquarters. The Engineering and Sales departments are also to remain in Cincinnati.

Sindey, Ohio, plant where Ahrens-Fox fire apparatus will be built.

The arrangement merges two companies, both long established in their respective fields: Ahrens-Fox for custom built fire apparatus and the C. D. Beck Company for high quality, custom built inter-city coaches.

The design and quality control are to remain the responsibility of Ahrens-Fox engineers, while the new, larger, more modern facilities will greatly lessen the delivery time for apparatus.

Shown here is the "New Look" in Oren custom-built fire engines for 1954. Pictured is a Model 1600 pumper, featuring 1000-gallon multi-stage pump with recessed operating panels, four-man all-steel closed cab, new streamlined fenders, and an assortment of features and equipment to meet Civil Defense requirements. An unusual feature is the full-swivel mounting deck for deluge nozzle which permits the intakes to take water from either side or rear of apparatus. This deck can be moved at the touch of a finger, but holds any desired position in which it may be set. Oren is currently building four similar units for Nashville, Tenn., for Civil Defense use, as well as many others for other cities throughout the Eastern part of the country.

MCA Issues New Safety Data

Two new safety data sheets have been issued by the Manufacturing Chemists' Association, 246 Woodward Building, Washington 5, D. C., which should find use by the fire service.

Safety Data Sheet SD-54 covers ortho-dichlorobenzene, a chemical widely used as a solvent and as an intermediate for other chemical products. The data sheet gives essential physical properties and information on the safe handling, storage and transportation of this colorless but hazardous chemical.

Chemical Safety Data Sheet SD-55 gives the properties and information for

"We've cut our hose costs in half

BY STANDARDIZING ON PREMIUM QUALITY

EUREKA
Multiple-Woven"

THE "CHIEF" knows that Eureka MULTIPLE-WOVEN actually costs *far less per year* than hose selling at only half its price! This unique, top quality hose not only lasts up to 6 times longer but also provides a much greater degree of safety and dependability throughout its long life.

Eureka MULTIPLE-WOVEN hose is circular-woven on special Eureka looms so that all plies are *interwoven* into a homogeneous jacket. There's no room between plies for water or dirt to collect, as in loose-jacketed hose. Balanced weaving and controlled curing eliminate excessive writhing and warping, making it safer to handle on ladders. Its smooth-interior filler ply reduces hydraulic friction, assures maximum nozzle pressure.

Eureka makes and sells all grades of fire hose. But, for true long-range economy—the economy of quality—we recommend you invest your future hose appropriations in dependable, long lasting Eureka MULTIPLE-WOVEN. There's no other hose like it!

"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Cotton Rubber-Lined Fire Hose

195 Hudson Street • New York, 13, New York • *Division of United States Rubber Company*

the safe handling, storage and use of butadiene, the chemical widely used in the manufacture of rubber products. It describes the fire, explosion and health hazards and includes recommendations for safety procedures in unloading, storing, handling and waste disposal.

Copies of these Data Sheets may be had by writing MCA at the above address, and forwarding 25 cents for each sheet.

Selection of Portable Heaters

Heat output and portability are not the only major factors to consider when buying portable space heaters for cold weather uses. According to R. C. Koehring, Portable Heater Sales Manager for the Herman Nelson Division of American Air Filter Company, Inc., Moline, Illinois, one of the most important points to check is the safety of the heater. The subject is fully covered in a new Herman Nelson publication, "Guide to the Selection and Use of Portable Space Heaters."

Copies may be obtained free of charge by writing to the company or contacting a Herman Nelson distributor.

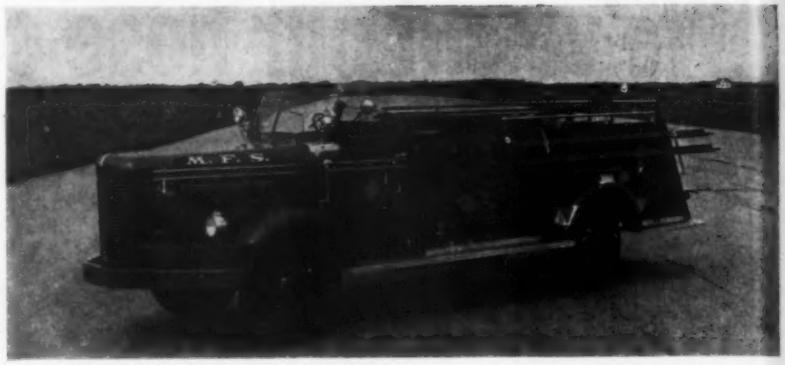
Contest Sparks N. C. Firemen's Day

An unusual contest headlined the recent Winston-Salem, North Carolina, Firemen's Day—a race in which contestants had to don air demand type breathing equipment and run 120 feet.

The winner was J. C. Hendrix, Jr., of the new Forsythe County (N.C.) Volunteer Fire Department, who slapped on a Scott Air-Pak and ran the distance in the total time of 35 seconds.

Each contestant had to put on his breathing equipment without assistance and was not permitted to make any adjustments after leaving the starting line. This exhibition of modern fire service efficiency was judged also on the manner in which all buckles, straps, etc., were fastened. Time alone was not enough to win.

Second prize was won by Fletcher of the South Work Fire Department, and third, by Johnson of Lewisville Fire Department in 36 and 38 seconds, respectively, both using Scott Air-Paks.



Pictured above is a new FWD Model F1250T Pumper recently put into service by the City of Montreal Fire Services. Rated at 1000 Imperial gallons, this FWD Pumper is powered by a Waukesha 817 cubic inch, 6 cylinder, 250 h.p. engine. Special features include FWD's patented Power Proportioning Centre Differential, which distributes power to the front and rear axles in direct proportion to the weight on each axle, thus assuring maximum traction, stability and safety.

Kidde Opens Toronto Office

A new office has been opened by Walter Kidde & Company of Canada Ltd., at 360 Old Weston Road, Toronto, Ontario.

The office will handle the company's full line of built-in CO_2 fire extinguishing systems, smoke detection equipment, and portable units. It will service the Province of Ontario.

J. H. Ingham, formerly assistant manager of Kidde's Montreal office, will act as district manager for the Toronto office.

New York City Buys Aerials

The City of New York, with a fleet of over sixty FWD fire engines now in operation, has ordered twenty-five 75-foot aerial ladder trucks from the Four Wheel Drive Auto Company, the company anounced on December 21. The order has a total value of $752,500.00.

The New York order is the third major order for fire apparatus received by FWD this year. The City of Chicago ordered twelve 85-foot aerial ladder trucks in October, and the last group of thirty 1,000 gallon per minute pumpers for the same customer is now rolling off the production line at FWD.

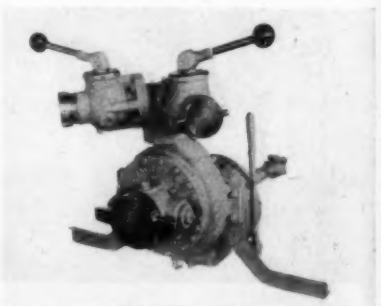
The company records show that the first FWD fire engines ordered by New York City were delivered early in 1927

Specifications on the tractors for the new aerials are for 148-inch wheelbase, full air brakes and a 216 horsepower Waukesha gasoline engine.

The aerials will have wood ladders and spring hoists. Delivery will start late next summer.

Waterous Announces New Front-Mounted Pump

A new 500-GPM Class "A" single-stage, front-mounted centrifugal fire pump has been announced by the Waterous Company, St. Paul, Minn.



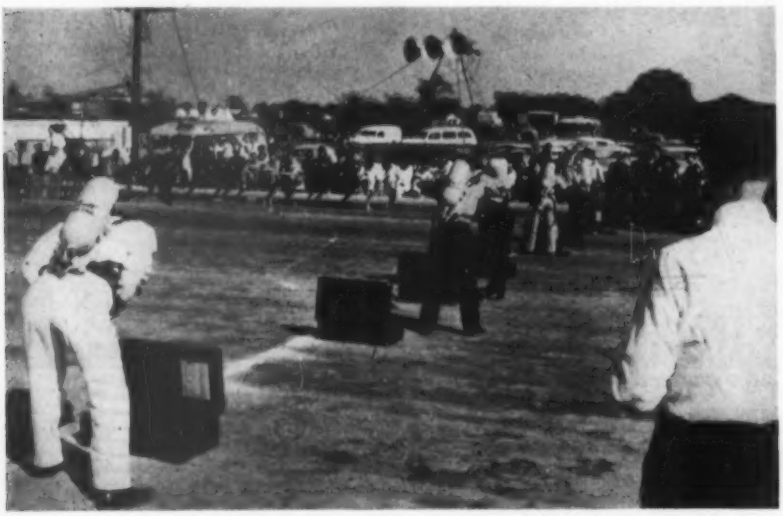
New Waterous 500 gpm Class A, front-mounted pump.

Referred to as Model CF-3, the new pump features a single plate, dry, automotive-type clutch which may be engaged or disengaged at any speed. The pump remains in or out of gear until changed. Operating lever can be conveniently located on either side of the pump.

Other features include a hydraulically and mechanically balanced bronze impeller with a stainless steel shaft. Grease lubricated ball bearings are used throughout. Valves, primers, and other accessories are the same as found on larger size Waterous pumps.

Further information may be obtained by writing the Waterous Company.

(*Continued on page 73*)



Start of novel race in which contestants wore self-contained breathing equipment.

Once it gets a foothold, fire rips into a plant like a monstrous claw. That means every hazard—flammable liquids, electrical equipment as well as ordinary combustibles—should be guarded with Kidde Portable Extinguishers or Built-in Systems.

The word "Kidde" and the Kidde seal are trade-marks of Walter Kidde & Company, Inc. and its associated companies.

Kidde

Walter Kidde & Company, Inc.
133 Main St., Belleville 9, N. J.
Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

FALSE ALARMS

Viewpoint

A man was driving in the country one day, and he saw an old man sitting on a fence rail watching the automobiles go by. Stopping to pass the time of day, the travaler said:

"I never could stand living out here. you don't see anything. You don't travel like I do. I'm going all the time."

The old man on the fence looked down at the stranger slowly and then he drawled:

"I can't see much difference in what I'm doing and what you're doing. I set on the fence and watch the autos go by, and you set in your auto and watch the fences go by. It's just the way you look at things."

A little girl's essay on the life of Benjamin Franklin: "Benjamin Franklin was born in Boston, traveled to Philadelphia, met a lady in the street, she laughed at him, he married her and discovered electricity."

"What," said the visitor, "do you have in that lovely vase on the mantel?"

"My husband's ashes," she replied.

"Oh, I'm so sorry," was the embarrassed rejoinder. "I didn't know that he had died."

"Dead? Who's dead? The bum's just too lazy to look for an ashtray."

Finally

Forty years they had been hitched, and 40 years she had made the living; then he died. The thrifty widow instructed that his body be cremated and the ashes delivered to her. Carefully placing them in an hourglass she set it on the mantel, sat down to rock and said: "Now, you worthless bum, at last you're going to work."

Pausing beside the Swedish maid in the hall of the New Orleans hotel, the house detective said out of the side of his mouth, "Know anything about the sporty looking old gent in 416?"

"Aye tank he owns a plantation," she answered.

"What makes you think so?" asked the detective.

"Vell," she replied, "ven I vas dustin' by his door, I hear him say, 'Let's have anodder drink, den go out and raise cane, Sugar!' "

"Anyone second that motion to adjourn?"

In his later years the famous cellist, David Popper, wore a jet black mustache although his hair was snow white. A friend asked him for the reason of his discrepancy. "That is simple," replied Popper. "My mustache is twenty years younger than my hair!"

The old farmer's lawyer learned that his client had just inherited a million. "If I don't break it to him gently, the old coot will drop dead. Make an appointment for me, and be handy just in case he collapses," he instructed his secretary.

When the ancient one arrived at the solicitor's office he grunted: "What's up?"

"Well, it's this way," commenced the lawyer, "what would you say if I told you that you had inherited a million?"

"Why, you idiot," crackled the client, "I would give half to you."

The solicitor dropped dead.

A Russian policeman spied a citizen atop Moscow's largest bridge getting ready to plunge himself to his death. The policeman ran forward hollering, "That doesn't solve anything."

"I can't go on this way," moaned the citizen. "Life is too awful."

"Well, we can at least talk it over," said the policeman. So they talked it over, and then they both jumped off the bridge.

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APPROVED

Safety Production Equipment

A PLUNGER CANS

Insure plant and operator safety in all cleaning, sponging and swabbing operations. When plunger is depressed a measured amount of the volatile and flammable fluid rises into the dasher to moisten the swab. Excess liquid flows back into the can and is not left on surface to evaporate or be ignited. Dasher containing fire baffle is self-extinguishing. Five sizes from 1 pt. to 2 gal.

B SAFETY CANS

For general use wherever flammables are employed within the plant. Fire prevention baffle is a double concentric cylinder inside base of spout. Spring-loaded cap automatically makes tight closure. Squeeze-grip handle; positive control while pouring.

C BENCH CANS

Reduce waste, speed production and give positive protection against fire and explosion: The spring mounted perforated metal dasher which also acts as the fire baffle covers the liquid surface and minimizes evaporation losses. A size to meet every requirement.

D OILY WASTE CANS

A necessity in every plant for the safe placement of oily or solvent-soaked rags and other waste material. Required by many insurance companies.
Full length cover opens wide by slight foot pressure at any point on full width treadle.

CLIP COUPON, fill in, attach to company letterhead and mail for Complete Catalog and Price List.

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Please send complete Catalog of Factory Safety Production Equipment with Price List.

We are especially interested in_____

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10,000 WATTS A.C.

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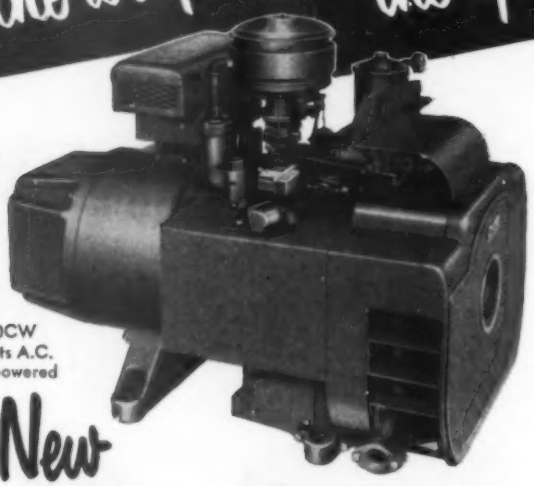


MODEL 10CW
10,000 watts A.C.
Gasoline-powered

the New ONAN "10 CW" Electric Plant

Check these advantages!

- ★ High capacity for big jobs.
- ★ Twin-cylinder, horizontally-opposed, air-cooled, alternate-firing engine.
- ★ Aluminum-alloy cylinder heads.
- ★ Extra-large, replaceable bearings.
- ★ Full-pressure lubrication, 6-quart oil capacity, oil filter.
- ★ Impulse-coupled, high-tension magneto ignition; radio suppressed.
- ★ Quiet, vacuum air cooling of generator and engine.
- ★ Excellent accessibility; snap-off housings.
- ★ Extremely quiet running.
- ★ High performance generators.
- ★ Completely equipped with controls and instruments.

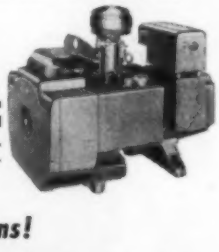
Costs less than any other complete electric plant!

You can't match it anywhere in performance, equipment or value. The sensational new Onan 10CW gives you everything you've wanted in an electric plant plus exceptional mobility for a unit of its capacity.

Mounted on fire truck, emergency truck or trailer, this 10,000-watt gasoline-driven plant provides power for floodlighting large areas, for power tools and other equipment.

Models for standby use also available. Take a good look at this new low-cost powerhouse! Offered also in 5,000-watt capacity.

Model 5CW
5,000 watts
Same advanced design as the 10CW with all its exclusive advantages. Built for heavy duty, economical operation.



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Among the Buffs

By Paul C. Ditzel

MAYBE it's the cynicism born of newspaper writing and reporting, but I never fail to read the journal of the Kent, England, Fire Brigade, for downright good humor. The British type of humor, applied to this mania euphemistically referred to as fire buffing, is exemplied in W. J. Butt's excellent magazine, "Kentish Fire."

After some rather flattering comments about FIRE ENGINEERING, this column and, incidentally, the writer thereof, Brother Butt goes on to tell of some of the hazards of fire fighting in Kent:

"We are becoming more and more accustomed to unusual requests that hardly an eyelid was batted when the police called at a station to borrow a couple of volunteers for an identification parade. You might well imagine that there was no lack of "bods" (cq) anxious to take part. Then the fun started because, cutting a long story short, one was selected as the suspect.

"When realization struck him fully, his first thought was of the men on either side who must obviously be thinking him a D.B. (dirty blighter); and what if it arrived at his own doorstep? At long last his fears were allayed, but he is fully resolved that now he looks like one, his volunteering days are over."

Butt insists that this "fire-laugh" originated at the Bexley Station: "A call was received from a very agitated woman that her television was on fire. On arrival, the troops found a most disconsolate person who had slung a bucket of water at the reflection of her domestic fire on the viewing screen."

But what Butt (no pun intended) really intrigues me with is his glossary of American slang around fire stations:

"Open her up"—Ventilate.

"She butts shot"—The female coupling damaged.

"A three-bagger"—A possible makeup.

"She's on the sky"—A reflection from the job.

"Big stick too short, gotta scale her"—The ladder is too short, so "hook ladders" must be used.

"Stretch in your booster and back it up with a big line"—Set in to the hydrant and lay out a line of hose.

While we're on international news, Brother Butt also sends along the incidental intelligence that the Japanese firemen, in 1800, dressed in red and white kimonos and would chant songs and wield standards which were calculated to scare away the evil fire spirit. They would then pour water on the fire. (Ed.: I understand quite a few fires got away from the boys in those days!)

Getting back home, W. A. McDonnell, 1531 Switzer Ave., St. Louis, Mo., appropriately needles us with the smog problem, a touchy subject to us Los Angelenos. "How come all you Californians are moving on to this section of the country. Isn't it true that on a recent big fire, the smog was so bad that the Los Angeles Fire Department was two hours locating the building?" It's bad out here, Mac, but not that bad. It took only an hour and a half.

Here's another one like ex-Police Sgt. Paddy McDonald, now retired, of the

Chicago Police Department: Comes now Alan Plummer, 412 Madison St., Brooklyn 21, N. Y., to say he's a policeman, but don't hold it against him, because his heart is really in the fire service. (Paddy is the one, you know, who says it takes brains to be a policeman and only brawn to be a fireman. But he likes arguments almost as much as he does attending Chicago's workers!) Plummer is a buff at Engine 226 in Brooklyn and also fans at the borough's fire alarm telegraph bureau. Says he keeps tabs on the fire situation via a Hallicrafter set.

And here's one that should get the earnest attention of Smokestack Hardy, Jack Robrecht and a few other of you demon letter writers and distributors of firemania, etc.:

Lad by the name of Bruce Rice, Box 148, 56 Pond St., Wickford, R. I., is just getting started in buffing. Bruce says he's already got himself a complete set of turnouts and is working on other souvenirs, "but like my father says, Rome wasn't built in a day."

Ordinarily, I might be inclined to Deep Six requests for "the works" like I get almost daily from the lunatic fringe of the hobby. Believe me, I get some dillies and many of them are from adults who don't bother to say please, thanks, or even enclose a stamped, self-addressed envelope. Bruce, however, was polite enough to carefully say that he wasn't asking for a "free handout" but promised to do his best as a correspondent and also in the way of trading. Youngsters like that need encouragement. Let's give it to him. Bruce's dad, incidentally, was on the crash-rescue crew at the Quonset Point Naval Base and the family now lives near Wickford's main station.

Also in the mails, Raymond Seward, 1345 Rogers Ave., Brooklyn 10, N. Y., writes that the new officers of The 255 Club are: Harold E. Graham, president; John Barberi, vice president; Joseph Madden, treasurer, and John Gallagher, secretary.

A belated thanks to those of you who thought of this column during the Christmas season. Thanks for all your remembrances. Sorry I can't answer them individually. Keep sending along the anecdotes and other fire buff material. The address remains: 419 Napoleon St., Playa del Rey, Calif.

Old Fire Engine Wanted

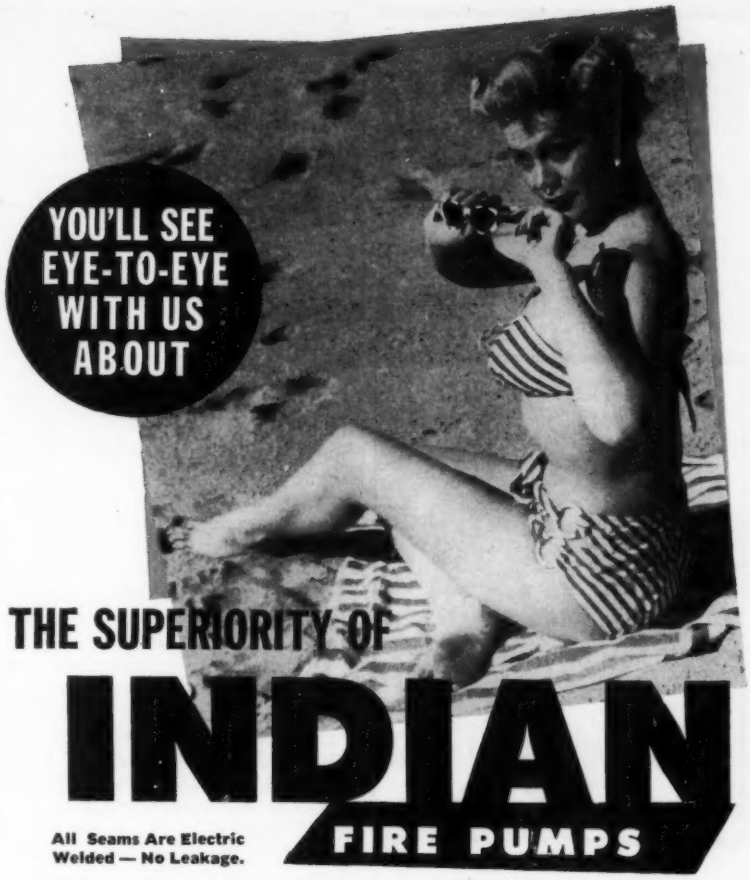
Here's a worthy project. It takes the form of a communication from Mr. William Preis, P. O. Box 181, Yellow Springs, Ohio, which reads in part:

"The elementary school in our town wants to buy an old fire engine. I have been commissioned to get one. Chief Henry Thomas, president of the International Association of Fire Chiefs, with whom I have communicated, suggested that we contact you.

"I should add that the kids earned about $100 last year and that's all that is available for the purchase. The equipment does not have to be in running order, does not have to be valuable, or antique. I think the idea is that they (the kids) can work on it, paint it, shine it, etc.

"It is something they want, and it is their idea to get it."

Anybody got an old fire engine which they would like to invest in "Operation Good Will?" If so, contact Mr. Preis.



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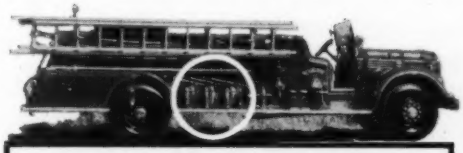
They do a better job and do it faster than soda acid extinguishers . . . with just clear water. Off the truck — on to the back — into action. INDIANS cut fire fighting time, reduce water damage, save laying hose.



New truck delivered to Lafayette Fire District built by Coast Apparatus, Inc. of Concord, California. Note INDIAN FIRE PUMPS mounted on running board.

"INDIANS Do Wonderful Work"

"In our fire department we use nothing but INDIAN FIRE PUMPS for a portable extinguisher. We now have 10 INDIANS and intend to order more. They do wonderful work for me and I recommend them highly for Fire Dept. use."

Chris W. Wall, Fire Chief
Poughkeepsie, N. Y.

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For Practical Discussion of Current Fire Department and Fire Management Problems

SHIFTING TRENDS IN HOUSE WATCH?

THE first installment of answers to the Round Table questions posed in the December issue of *Fire Engineering* are published in the following. They indicate a shift in some quarters, on the policy of maintaining 24-hour house watch in fire stations.

Logically, most of the replies included herein are from chiefs of paid municipal departments because few full-volunteer departments attempt to keep anyone on watch in the engine houses, even though some of volunteers might be "sleeping-in."

It has not been many years since a few chiefs began to experiment with the idea of permitting the full crews at stations to sleep without maintaining a man on watch to receive alarms and otherwise police the station. Contrary to the predictions of some officers that the "no-watch" system would not work out well, a number of cities report that it is doing so, and they would not change back. Nevertheless a majority of respondents, particularly in the larger cities operating on three-shifts, apparently still adhere to the 24-hour-watch system.

The six questions asked of representative fire chiefs, covering this Round Table, are listed herein. The methods employed by some departments of receiving night alarms, and of alerting firehouse crews, are interesting, as are the recommendations for possible improvements in the systems employed.

It will be noted that the questions, and replies, do not deal with anything except the receipt of alarms and alerting of fire fighters. The questions of other duties and responsibilities for house watch, day and night, have not been included in this study.

Readers are invited to participate in this discussion which will be continued in the February issue. Address replies to Round Table Editor, 24 West 40th Street, New York, N. Y.

Discussion of the Topic

Walter L. Hydaker, Chief, Lima, Ohio: We maintain a 16-hour house watch. One fire fighter is on from 7 A. M. to 5 P. M. and one from 5 P. M. until 11 P. M.

We maintain a rotation of personnel watch from 7 A. M. to 11 P. M. daily. Then from 11 P. M. to 7 A. M. our fire telephone and all communications are transferred from the downstairs control office to the upstairs control office which is located immediately adjacent to the rooms occupied by the assistant chiefs and captains on duty. Either one of these two officers receives all incoming calls during the night and the necessary running orders are transmitted to the proper companies by the officer receiving the call.

This method has proven very satisfactory here at Lima during the past nine years.

I would like to add that I feel the system we now use is in every way as efficient as the 24-hour watch we at one time maintained. I do know that the members of the department are for it 100 per cent. In my opinion, a satisfied personnel will make most any system workable.

We are a paid department.

Marvin K. Evans, Chief, Lynchburg, Va.: We do not maintain a 24-hour house watch.

All incoming calls are handled through telephoned switchboard located at headquarters station. Switchboard is manned fourteen hours daily by men at this station, each man having 65 minutes tour of duty per day. By all incoming calls, it is meant those calls for the outlying stations as well. Likewise, all outgoing calls from the outlying stations are handled through this board.

At night, beginning at 10 P. M., the board is "set." That is, all calls for the entire department are routed

HERE ARE THE QUESTIONS

1. **Does your department maintain a 24-hour house watch?**
2. **If so, how long does each member of the company stand watch: (a) day watch; (b) night watch?**
3. **If no night watch is maintained, how does your system work in regards to alerting companies at night?**
4. **Has the method you employ worked out satisfactorily?**
5. **Any suggestions for its improvement?**
6. **Is your fire department paid or volunteer?**

through a three-key telephone located in the officers' sleeping quarters, and this phone is answered by the captain of the station. Calls may come in on any one of the three trunk lines. One of these trunk lines is connected, through the main switchboard, to each of the outlying stations. When the number of this trunk line is dialed, then the telephone rings in each station. If the call comes in on one of the other two lines, then the officer at headquarters station has to take the call, hang up the phone, or break the connection, and dial the common number, thereby getting the officer of each house to answer simultaneously, or, if he prefers, he may use a direct, battery-powered, private telephone connecting each house with headquarters.

The only improvement, in my opinion, would be to have a pilot light for each incoming trunk line so that the officer could readily tell which of the three lines the call was coming in on.

We are a paid department.

Anthony Molloy, Chief, Nashua, N. H.: We maintain a 24-hour house watch in headquarters only to operate PBX and radio.

The hours run 8 A. M. to 5 P. M., 5 P. M. to 12 Midnight, 12 Midnight to 8 A. M. The men are regularly assigned to each shift. When they have time off they are relieved by men at headquarters. The first trick has Sundays off, the second takes time off when he wants it, and the third trick has Saturday nights off. The first and last tricks shift the first of the month.

When permanent men relieve the operators, they work four-hour tricks. This system has proved very good so far. We do believe that four regular operators working eight hours each would be better.

We have seventy-three permanent men and fifteen call men.

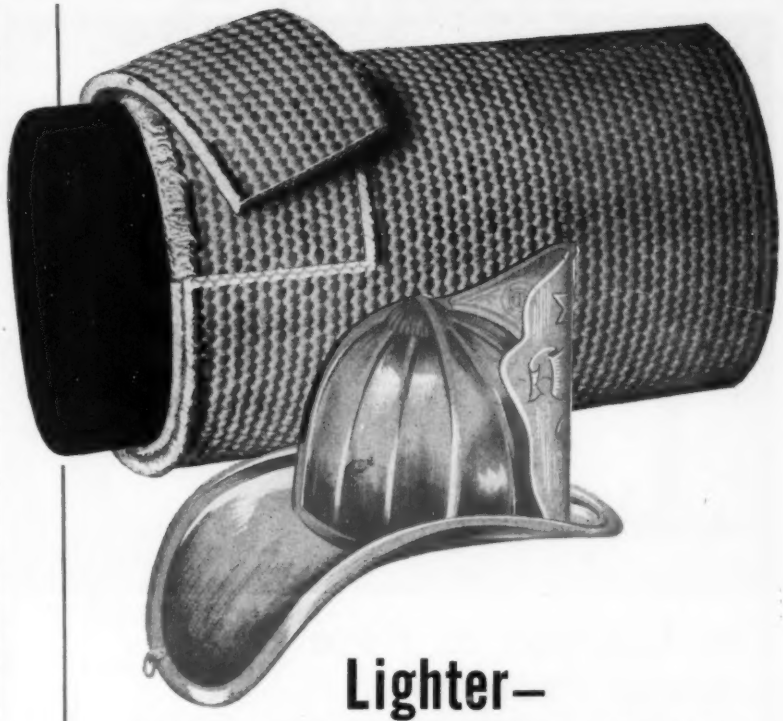
C. W. Wyrick, Chief, Greensboro, N. C.: We have three men on our switchboard and they each work eight hours. The watch is kept continuously through the day and night. Each of these men is physically handicapped in one way or another, but is thoroughly capable of performing his duties. If only more fire departments over this nation of ours would only realize that the handicapped men need work just as much as those who are not handicapped!

None of these men was injured in line of duty, but we have found them to be, in many respects, more efficient than the average man that is fit.

We have a two-way radio system, and all these men are licensed operators.

Ben J. Zahn, Chief, Ann Arbor, Mich.: In our department we do maintain a man on watch twenty-four hours a day. From 7 A. M. until 10 P. M. (day watch), the men change every hour, but during the night the man on watch sleeps right by the telephones. All members excepting the chief and assistants take their turn. A few of the older members are classed as extra to fill in during vacations and sick periods. We have two stations and alarms are received simultaneously at both places and then each one taking care of its own district.

We have used this method for forty



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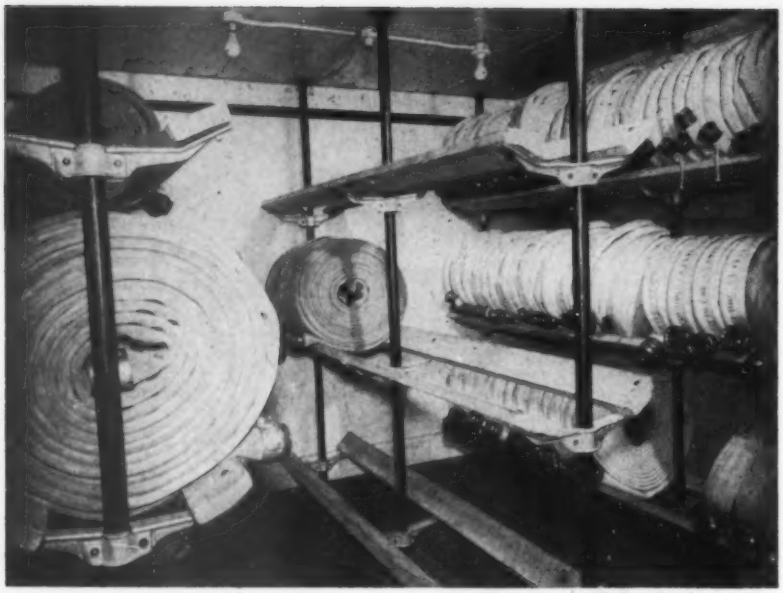

Photo Courtesy Wichita Fire Station No. 1

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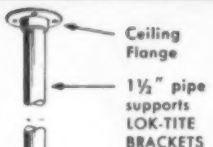

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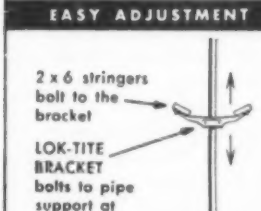

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years and have never experienced any trouble.

Our department consists of fifty-seven paid men and twenty paid part-time volunteers.

John A. Ferguson, Chief Weirton, W. Va.: One volunteer company stands night watch. Paid company mans control center ten hours a day and fourteen hours night. This department alerts all stations over Gamewell system and telephone. All stations are connected by alarm system. There are also private lines to each station. This system has worked very effectively.

We have one station maintained by paid and volunteers. The other two stations are manned by volunteers. Each has its zone of influence. The paid department answers all calls.

John Zanet, Chief, Clifton, N. J.: We maintain a house watch from 7 A. M. until 10 P. M. Each member stands two-hour watch periods.

We have a central fire alarm station with operators on duty twenty-four hours a day. Boxes come in automatically over Gamewell alarm system and telephone alarms are transmitted over direct telephone lines to each fire house. After 10 P. M. there is a telephone in each officer's room for still alarms. Each fire house has an emergency night bell with button outside.

In thirty-four years we have had no complaints.

We are a paid department.

Norman McFarland, Chief, New Castle, Pa.: We maintain a sixteen-hour watch. We use incapacitated firemen on regular shifts, 10 hours day and 6 hours before retiring on night shift.

Telephones continually ring until answered or if telephone alarm is received first at Central Station a tap is given on Gamewell fire alarm system to alert companies.

This system works satisfactorily. The only improvement we can suggest is the addition of radio, which we plan to install in the near future.

Our fire department is fully paid.

George Schlotterbeck, Chief, Hamilton, Ohio: We maintain a twenty-four hour house watch. At headquarters we have our alarm and radio operators. Their duty is to maintain a constant watch twenty-four hours a day.

In all other stations, the officer is responsible for maintaining the watch and dividing the responsibility twenty-four hours a day among the men.

This method has proven very satisfactory.

Our department is paid.

E. P. Feaster, Chief, Lincoln, Neb.: We do not maintain a twenty-four hour house watch.

A day watch is maintained by officer in charge with no time specified as the alarms are taken in the captain's office and such times as he is in the office, it is his responsibility. In his absence, he assigns this duty. At night or sleeping hours, telephone connections are made available for captain in bedrooms or sleeping quarters.

At alarm headquarters a regular telephone operator and captain have charge of daytime assignments subject to assistance from qualified men. At night, or sleeping hours, this is the responsibility of telephone operator and captain. Beds are provided so they can sleep by all fire alarm equipment.

Outgoing alarms to station are relayed by telephone with signal lights showing these stations have been alerted.

This method has been used for over forty years and has proven very satisfactory.

We are a paid department.

W. K. Moore, Chief, Yakima, Wash.: We are a fully paid department. All alarms emanate from a central alarm office and we maintain a twenty-four hour watch with our alarm operators working an eight hour shift. We also maintain a live watch at each station, from 7 A. M. until 10 P. M. This watch is worked in two-hour shifts. The balance of the night the man on the watch is allowed to sleep in a bed by the phone provided for this purpose. All companies are alerted from the central alarm office by sounding three bells on the fire alarm system. The location and all available information is transmitted to all stations simultaneously by loudspeaker and by telephone. Man on watch at each station must confirm location with alarm operator.

This method has worked very satisfactorily, but we are adding one more feature. We have on order a manual transmitted so that we can confirm each alarm by sending it out as a box alarm.

Ernest Gale, Chief, Islip, N. Y.: We maintain a twenty-four hour watch. We are a volunter department with three full-time paid men and one relief man. The full-time men work an eight hour tour with one day off each week and a two weeks' vacation with pay. The relief man covers the days off, the vacations and sick time.

The same man is on the 8 A.M. to 4 P.M. tour continously as he is also the department mechanic. All work is done in a well equipped shop at headquarters. The other two tours alternate, one week from 4 P.M. to 12 Midnight and the next week from 12 Midnight to 8 A.M. One week he works forty hours and the next fifty-six hours. As we pay every two weeks, they all total ninety-six hours.

The house men are all regular members of the department, but, of course, do not turn out on alarms when on duty. We have eight trucks, all of which are three-way radio equipped. The house men are all licensed to operate the base station. This system has been used by us for years and we find it very satisfactory to all concerned.

Lester R. Schick, Chief, Davenport, Ia.: Our department maintains a twenty-four hour house watch in Central Station. In the out stations only night house watch is maintained, bed being provided.

Each man takes his turn at the watch for a twenty-four hour period.

The out station watch program is not satisfactory at present. Central Station program is satisfactory and meets our requiremnts.

I have always felt one of the finest public relations efforts of a department is to have a neat, alert man meet and assist visitors as soon as they enter a fire station.

Ours is a paid department.

Zephrin F. Drouin, Chief, Lewiston, Maine: A dispatcher is on duty twenty-four hours a day working in eight hour shifts. There are three shifts and a swing man relieving one

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dispatcher for a day off duty per week. In the event of a general alarm or second alarm, all dispatchers report for duty. One of the off-duty dispatchers assists the Central Station dispatcher in notifying off personnel and alerting sub-stations.

So far this system has worked out remarkably well. Incidentally, the other two off-duty dispatchers return to the fire scene as fire fighters on major fires.

We doubt that anything other than to have radio facilities on all apparatus could improve our present setup. Working hours are good and facilities all right, except for the urgent need of radio in central station and on mobile equipment. This is a full-time paid department of fifty-nine members. Men are on duty twenty-four hours and off twenty-four hours.

* * *

The following replies are in answer to a previous round table discussion on recorders:

N. L. Wheeler, Chief, Miami, Fla.: At the present time the Southern Bell Telephone Company is installing in the fire alarm office a recorder which will make a continuous record of all messages going through the new switchboard, whether they be regular calls or calls over the new emergency telephone system.

Recording of all types of telephone messages will give an absolutely positive check on all transactions that are carried on by telephone in the fire alarm office, thereby eliminating all doubts as to just what type of message was transmitted.

John C. Klinck, Chief, Memphis, Tenn.: While our fire alarm headquarters is not equipped with recorders, I believe they would be beneficial to the department in rectifying any mistakes in telephone conversations and/or radio. They can be used for recognition of voices turning in false alarms and also to check correct address of fire hazards reported.

Charles E. Lane, Chief, Great Falls, Mont.: While we do not have recorders in our department, I do believe that this equipment would be of great assistance in checking bad calls coming over telephone and radio.

G. L. Simpson, Chief, Phoenix, Ariz.: Our alarm headquarters is equipped to record all fire alarms received over the telephone. We do not have a recorder on our radio, but keep a complete log of all radio communications.

We know that the recording of telephone conversations has been very beneficial to the department because we can immediately play back any conversation if there is any doubt of a particular address, etc. Also, it has been very instrumental in apprehending false alarm subjects, also in settling disputes when an alarm is sounded and the informer is excited and gives the wrong address, or our alarm operators make a mistake.

C. D. Williams, Acting Chief, Las Vegas, Nev.: We do not have recorders for recording telephone or radio conversations.

I definitely feel it would be advantageous to record all alarms, whether by radio or telephone. In many instances we have been given incorrect addresses and because of the delay in rechecking through telephone central, we have been accused of inefficiency and laxity in responding to alarms. Recording would definitely disprove these accusations.

Forrest B. Lucas, Chief, Dayton, Ohio: Our fire alarm office is equipped to record telephone conversations, but not radio conversations.

The recording device has proven most beneficial in many ways in connection with the telephone alarms:

1. Through the recording of voices we have been able to apprehend several false alarm senders.

2. We have been able to prove that the fire department was not at fault in dispatching apparatus. For example, one lady moved from one address to another and in reporting a fire a few days later gave her former address. Another example was where it had been reported to the press by the people at the scene of the fire that the dispatcher had questioned them as to whether the fire was located inside the city or not. This was easily disproved.

3. It has also proven beneficial in determining who was at fault where response was made to the wrong address.

4. It is also helpful in that you can play these recordings back and sometimes ascertain the location of the fire, when it was impossible to get it directly over the phone.

It is my opinion that it would be beneficial to record all conversations (radio and telephone) between dispatcher, citizens and fire stations. The

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dispatchers then in their slack moments could take from the recorder and write in the log (for permanency) all pertinent information and the entire day's business could be kept for a reasonable time before reusing the wire.

R. **A. Bogan, Chief, Baton Rouge, La.:** Our fire alarm headquarters is equipped to record telephone but not radio conversations.

Recordings prove beneficial to the fire department in connection with telephoned alarms for several reasons: They verify a telephoned alarm should there be an error and discrepancy between the operator and the one who telephones it in; they afford a check for the operator and possibly an early correction of an error should he send the wrong truck, etc.; they would also help keep the operators alert to being accurate at all times.

Recorders have also been helpful in apprehending the senders of telephoned false alarms, for it is possible to get a suspect to telephone again and then compare the voices on the two recordings.

William Van Pfefferle, Chief, Camden, N. J.: We do not have recorders in our department, but I have recommended their installation for recording telephone conversations over the trunk lines and our private P.B.X. system.

As we do not have radio communication in the Fire Bureau as yet, our concern is with the telephone calls between the public and the fire board operator and the watch desk in the fire stations and the fire board operator.

Fire apparatus are occasionally dispatched to the wrong location in answer to an alarm, causing delay in arriving at the fire and criticism by the citizens awaiting their arrival.

Recording of the conversation connected with the call would fix the responsibility for the error.

Occasionally, one or more companies will proceed to the wrong location or fill in unnecessarily for another company due to someone's failure to send or receive calls reporting apparatus in or out of service. Recording these calls would fix the responsibility for these errors or delinquencies.

Due to the use of the dial system in this area, recorders would be of little value in apprehending senders of telephoned false alarms.

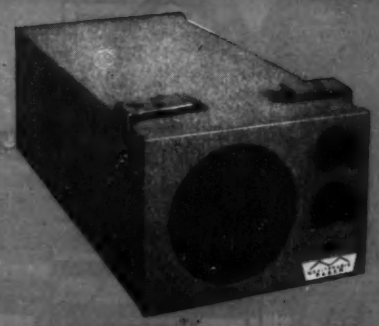
Pacific Coast Inter-Mountain Conference in Long Beach

The Board of Directors of the Pacific Coast Inter-Mountain Association of Fire Chiefs has announced the 1954 convention will be held in Long Beach, Calif., August 23-26.

The first day (Monday) will be for registration and the convention program will open on Tuesday morning, the 24th.

The last time the Association met in Long Beach was in 1946. The host will be Chief Frank Sandeman who, with his aides, promises the delegates "the best time ever."

The trip of Association members to Honolulu, which has been under advisement for some time, will be carried out as planned. The party will leave on the 30th of October. A two-day meeting will be held in Honolulu on November 1 and 2, according to chairman Edmondson.



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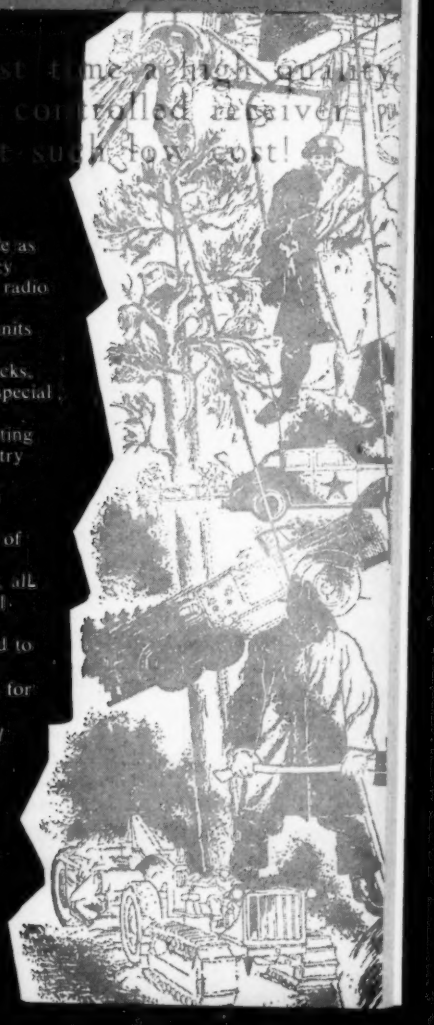


World Wide Fire News

By Roi B. Woolley

Fatal Airbase Fire Probed

The Air Force opened an investigation into the cause of a barracks fire at Sampson Air Force Base, N. Y., in which three young airmen died early Nov. 1st. Although there is no evidence of arson, there is some mystification over the rapid spread of the fire in the old wooden barracks, and the failure of all the personnel quartered there to escape.

In addition to the three airmen who were suffocated, a civilian fireman at the base was overcome by smoke and hospitalized, but later released.

A fire wall which divided the building lengthwise, and the quick action of the airman in charge of the barracks, were credited with keeping the death toll from going higher. Nineteen men, most of them with only their blankets wrapped around them, escaped the burning building. Many others were fortunately off the base on weekend passes.

The fire was discovered about 2:00 A.M. by an unidentified airman, who notified the barracks chief, Airman Charles Reeves of Irving, Tex. Reeves aroused the endangered occupants of the wooden structure over an inter-barracks loudspeaker system, which also spread the alarm to the men sleeping in nine adjoining units and alerted the firemen from the Base Fire Station, who responded promptly.

A stiff breeze and dense smoke hampered the local fire fighters and aiding forces from Seneca Ordinance Depot and neighboring communities of Willard and Ovid Air force members of the 3650th Air Installation Squadron also helped fight the fire.

The heavy smoke prevented firefighters from reaching the three men who perished in the blaze. One victim was found under his bed, another lying on a table, and the third in a hallway.

The fire collapsed the roof of the burned section of the barracks but the metal fire-wall prevented flames from spreading to the other half of the building. No estimate of loss was made but smoke and water damage were reported heavy.

* * *

British Fear Worse Fogs

Less than a year ago London suffered the worst fog disaster in history with more than 4,000 deaths; and in October, worried officials admitted it could happen again. Included among the worriers are British fire fighters who claim they have trouble enough fighting fires without having to cope with the almost impenetrable fog, or as we call it 'smog'.

The killer fog settled on London Dec. 5, last, and the suffocating blanket lifted Dec. 9. But for two weeks afterward the aged and middle aged, and even some children, died of ailments brought on by the struggle to keep from choking.

Deaths from bronchitis jumped 10 times over the average of previous weeks. Influenza deaths increased seven times; pneumonia fatalities, five times; and tuberculosis and other respiratory deaths went up sixfold. Included among the sufferers were some fire brigade members.

Scientists who have made exhaustive studies of the great fog concluded there was only one way to prevent a recurrence—produce less smoke. But according to the National Smoke Abatement Society it will be years before London is safe from such fogs, partly because of the stubborn insistence of British householders on a "nice open fire."

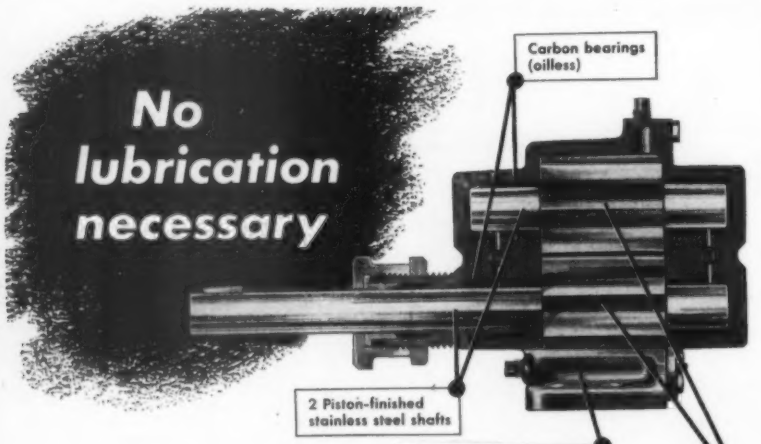
Meantime efforts to induce the public to adopt and use simple respirators or masks have met with little success.

As previously related by this Journal, response of the fire brigades to alarms of fire during these conditions has been slowed to a crawl. Warning lights and signals (the siren is not universally used on British fire "appliances") have been of little help. In some cases, responding units had to be preceded by firefighters on foot carrying lights as pilots or guides.

* * *

Hot Off the News Ticker

Fire broke out December 8, last, in a collection of documents in a corridor of the House of Commons but was speedily extinguished. . . . A 400-lb. bomb dropped during World War II exploded on the night of December 8th, killing four men and a 7-months-old child. Accident occurred in the village of Tuza, near Titograd, Capital of Montenegro. . . . Three grain elevators, five box cars and over 214,000 bushels of grain were destroyed in Picturebutte, Alberta. Fire originated in top of the wheat pool elevator and spread to two adjoining elevators owned by the Elli-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LIST PRICES — No. 26—$200.00 No. 13—$90.00

Slighly higher west of Rockies

FIRE PUMP DIVISION, Oberdorfer Foundries, Inc., Syracuse, N. Y.

son Mills, Ltd. . . . A little word, with a double meaning, was said to have caused the death of a Japanese construction worker in a town west of Tokyo. The laborer was killed by the explosion of a wet stick of dynamite he was trying to dry. His foreman had instructed him to dry it in the sun. In Japanese the words for "sun" and "fire" are pronounced the same—it sounds like the word "he" in English. The worker picked the wrong "he" and laid the dynamite on a blazing fire. . . . Residents of the North Sea resort city of Lowescroft, Eng., were warned not to smash bottles filled with a yellowish liquid found near the beach. Bottles contained phosphorus, which bursts into flames when exposed to the air. Bottles were issued in last war as an anti-invader weapon. . . . Resources of the National Defense Transportation Association will be available to the American Red Cross in time of disaster under an agreement signed last November. Pact places at disposal of the Red Cross for disaster relief both civilian and military facilities and personnel directed by more than 10,000 executives in all branches of transportation. . . . Army engineers are buying land around many of the nation's major cities to be used as launching sites for the new anti-aircraft guided missile, the "nike." List is hush-hush, but it is known that Niagara Falls, N. Y., is one selected. A large cleared area is required for the "nike" launching site. "Booster bottles" which assist the rocket in getting air-borne, fall after the takeoff and the area must be freed of houses. Another headache for fire forces? . . . The Air Force now blames a defective firing system for the hail of machine gun bullets that poured into the business section of Farrell, Pa., recently. No one was hurt, and no fires started, but considerable property damage was done. . . . An Indiantown Gap, Pa., soldier was lodged in the hoosegow in default of bail on charges of malicious mischief for allegedly setting fire to a mattress in a Pittsburgh hotel recently. A possible serious fire was averted by Mark Oberle, a hotel resident and member of the Phoenix Fire Company, who grabbed an extinguisher, wet down the blazing mattress, and then heaved it out the window. . . . The 270 delegates of the New York State Fire Fighters Association at their annual convention, heard William Cross, president, of Utica, demand repeal of the Condon Wadlin Act, N. Y., that prohibits strikes by civil service employes. . . . A horse trapped in a muddy pit was consoled with buckets of warm beer in Hatfield, Eng., while ten firemen spent nine hours digging him free. Lifted to dry ground with a block and tackle, the horse promptly passed out, snoring. . . . Suits totalling $500,000 were filed early in November on behalf of eight greater Boston longshoremen injured in the fatal explosions and fire on the Norwegian freighter Black Falcon. Seven died in the blasts and fire and 13 were injured. . . . Delayed message from London says that the city's annual deb's dance went off with a bang, in fact three bangs! The 250 debs, dazzling in white, swept down the stairs of fashionable Grosvenor House in perfect two-by-two to curtsey before a huge cake. Minutes later the cake exploded with three muffled bangs, and wisps of blue smoke. Seems an unknown prankster had "wired the cake for sound."

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All types, all models. Underwriters' approved. Hose reel, manual and fully automatic systems. Complete engineering service.

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The New GA-8

PACIFIC PUMPER

Now in regular service and field tested and approved, the new "GA-8" is showing itself to be another top performer in the famous PACIFIC PUMPER line.

With or without electric starter* the lightweight "GA-8" is especially adapted to tanker use . . . as a portable unit the special sled-type mounting means easy handling in rough terrain. Light enough to be readily carried, the air-cooled, 4-cycle engine develops top volume and pressure for its weight.

The engine and pump are standard Pacific Units and have been fully tested and approved.

**Optional equipment.*

DIMENSIONS

Length	28¾ inches
Width	19¼ inches
Height	24¼ inches

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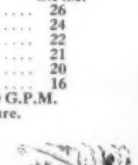
GA-8 (without starter)	115 lbs.
GA-8-S (with starter)	140 lbs.

PERFORMANCE

Pressure	G.P.M.
50	26
100	24
150	22
200	21
250	20
300	16

Normal operation is 20 G.P.M. at 250 lb. pressure.

PACIFIC "Pacolized" Hose



is a made-to-order partner for all portable or emergency water supply equipment. "Pacolized" Hose is permanently mildew-proof and rot-resistant. Made from "line" flax fibers, it is the most flexible hose of its type, lightweight and easy to carry.

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PACIFIC *Marine Supply Co.*
FIRE EQUIPMENT DIVISION
SEATTLE 1, WASHINGTON

Ventilation

(Continued from page 42)

What is complete and adequate ventilation for one fire may be insufficient for another.

There are a few basic considerations that might well be observed, on this score. The first is that a single opening, whether window, scuttle or bulkhead, is seldom adequate for effective ventilation of a building. There must be two (or more) openings, to provide *inlet* as well as *outlet* for fresh air. If pure air is to replace contaminated atmospheres, a way must be found to let that pure air in, or force it in, to replace the charged air which is to be displaced. In short, the bad air must have a place to go. Failure to provide the necessary secondary openings for that air travel may well result seriously for firefighters, and the property involved.

Another is that the nearer to the fire itself you can carry ventilating operations, the more effective will be the ventilating and the fire extinguishing. But again that does not mean one outlet venting.

One fire chief puts it this way: "a little ventilating can be a dangerous thing." Incomplete venting—the one-opening type, may only provide the fire with the oxygen it needs to touch off an explosion.

Here once again we fall back on size-up, on evaluating the task to be done and the means and time to do it. Opening a shaft or corridor at both ends may quickly and effectively exhaust a charged building of its smoke and gases at one fire, whereas the same procedure would fail completely in another instance.

Where size-up is buttressed by knowledge of the building which must be ventilated, and the occupancies, there should be little chance of incomplete, or inadequate ventilation.

Where there is doubt, an observation made by one authority may be followed: *over*-ventilation is better than *under*-ventilation.

There is no logical excuse for slap-dash, half-way, ventilation, or for destructive opening up which we shall discuss in the following. Adequate ventilation does not mean taking off the whole roof when a skylight will do; it does not mean knocking out the entire glass front of a store or door where a fanlight will suffice.

Scientific ventilation must be sufficient *to do the job* efficiently and safely.

Unnecessary and Destructive Ventilation

In spite of our vaunted progress in the science of fire control, including ventilation, the idea seems to persist in the minds of some firemen that you can't have adequate ventilation without destruction of property. In this respect, ventilation vies with forcible entry which, to some firemen, affords a wonderful opportunity for the exhibition of free-swinging axemanship and spectacular use of hook and claw tool.

Forcible entry and ventilation are, or should be, a smooth working team. Each operation bears upon the other. In forcible entry, the opening up may have a critical effect on venting the structure, or creation of smoke explosions, or backdraft. In opening up for ventilation of smoke and gases, likewise, the operation can be carried out constructively, or destructively.

In many fires, ventilation need not require any breaking of glass, smashing of doors or other closures. But every observer has seen cases where costly plate glass windows or doors have been broken out, or smashed in, without justification. They have seen windows broken in small dwelling fires, where even better ventilation might have been had by opening the windows top and bottom. They have seen plate glass show windows of mercantile establishments knocked in, and the solid show window background left intact. They have seen roofs opened to vent top floors, and no effort made to open the top-floor ceiling to provide free pas-

The public would no doubt complain about this apparent "wanton destruction," but fire fighters who had to reach the concealed cockloft blaze in this New York City school were mighty glad their brother firemen vented the area so thoroughly. Note the cellar pipes that were used getting at this fire.

sageway for smoke. Everyone has heard that old wheeze about the zealous fireman who boasted how he "took out" a door with one blow of his axe, only to learn to his chagrin that all he had to do to gain entrance was to turn the knob.

Lest the author be called too critical, we hasten to admit that this sort of firemanship—if you could call it that—is the exception and not the rule. Actually it is a pleasure to watch the experienced firefighter use an axe in cutting a roof, or opening a door or window. Such smooth, professional performance can only come with practical on-the-job experience; unfortunately, it cannot easily be taught in the classroom. But that is no reason for not at least training intensively for such operations.

Destructive ventilation is not alone that in which property on the fire ground is needlessly damaged; it can be the result of misguided opening of a structure so that the exhausted smoke and/or gases can cause damage to adjoining or neighborhood occupancies. Smoke and water damage still rank high as costly contributories to overall fire damage, and in many cases far exceed the latter. Thus the efficient, workmanlike job of ventilating is not only best for furthering attack on the fire, but it is best for preventing needless smoke or other damage.

Ventilation also may have a direct bearing on overhauling. It is frequently necessary to remove from the premises material or articles which, for one reason or another, should not be left therein. Care in this detail of ventilation may facilitate later overhauling.

One might not call removal of a smoldering, smoking, overstuffed furniture "ventilating," but certainly if you remove the *source* of the smoke and gases, you are taking the first step in venting the premises.

The advent of power-operated tools, which are coming rapidly into broader use in forcible entry and ventilating practices, may have profound effect upon the latter. Certainly, their use calls for greater skills and training. So, too, does the application of powered air movers, ejectors and exhausters. These innovations in the fire service have opened up an entirely new avenue of approach to the subject of ventilation. Their adaptation and application must be according to plan, else they can prove a liability, no less than the ill-considered use of any other tools of the firefighter's trade.

Exposure-Hazards and Improper Ventilation

We have mentioned the possible damage that might ensue from smoke and gases in exposures as a result of careless opening up. A word or two more at this juncture may be in order.

We have said earlier that size-up before venting is essential. Size-up should extend beyond the fire building and include exposures. And when we say exposures, if the fire itself is a smoky one, or if chemical fumes are involved, the *contents* of the exposures should be carefully considered.

Serious losses were sustained by the proprietors of a pet shop when smoke from a burning establishment nearby resulted in the death of many pets.

"The Chief says to get in there fast! Get the Scott Air-Paks"

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• When the building's charged with smoke and you've got to get to the source of the fire fast . . . slip on a SCOTT AIR-PAK in seconds and start to breathe that *cool, fresh air*. No matter how hard you work, you get relaxed comfortable breathing when *your life depends on it*. There's no fogging up of mask to restrict your vision, no worry about making your voice heard by others. You'll feel safer and put those fires out faster, make those rescues quicker, when you're wearing your SCOTT AIR-PAK.

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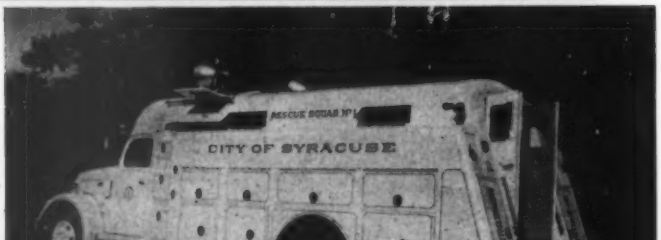

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Some smoke and odors have an affinity for certain stocks of merchandise, such as perishable foods. The officer in charge of ventilating a fire building may conceivably be so busy with the structure involved by fire that he can easily overlook this contingent damage. But at the earliest possible opportunity he should attempt to get the details of threatened occupancies and take all possible measures to prevent damage to them, which might eventuate as a result of the venting of the main fire premises.

If there is a salvage corps present, or available, doubtless the prevention of smoke or other damage to exposures will have its attention; but even so, it would be well to inform the officer in charge of salvage of any ventilation operation that may threaten such exposures. Salvage crews are nowadays operating as short-handed as fire fighting crews, and they may not have personnel to spare to go "down wind," shutting windows and other openings in exposed occupancies, and otherwise making them as tight as possible against smoke infiltration, or getting fans to work to clear away smoke and odors that have infiltrated. It may not be as easy to attempt this phase of loss prevention as it sounds here, but the officer charged with ventilating should give it thought, and even if it is necessary to press police or volunteers into service, all possible efforts should be made to prevent excessive "collateral exposure losses."

General Effects of Careless, Improper Ventilation

Misdirected and misapplied ventilation, particularly where it involves needless destruction of property, such as breaking of glass, cutting of roofs and the like, can result in unfavorable publicity and create poor public relations for a fire department. This is particularly true in the smaller communities where people are closer to their firemen than in the large cities.

The old chestnut that the firemen destroy everything that the fire doesn't, doubtless had some basis in fact a generation ago, but in view of the progress made since then, there is no longer any excuse for such jokes.

It is still true, however, that the average citizen cannot see any justification for opening up a roof when the fire is quite apparently in the basement, or for breaking out display windows when no fire at all is in evidence. Ventilation, to the average man-on-the-street, may be viewed as an axe-swinging orgy for the fireman. All of which behooves the fire force to (1) employ every strategy to prevent misunderstanding and misinterpretations of fire fighting operations, including forcible entry and ventilation, and (2) to inaugurate an educational campaign to acquaint that man-on-the-street with some of the facts involved when it comes to combating fire.

This latter may sound like a hopeless and thankless project, but it can be done. It can be done in many ways: by the personal contacts of fire fighters and their friends and acquaintances; by the fire officers in giving their reports to the press on how fires were extinguished; by the department availing itself of the facilities of local press and radio; by tieing in the story of how fires are fought with fire prevention campaigns.

The place to start any such project is

INDEX FOR 1953

The index covering the twelve issues of FIRE ENGINEERING for 1953 will be ready for distribution shortly. It has been prepared primarily as an aid to our many readers who maintain a file of those issues. Your copy will be mailed free upon request.

with the department itself. No fire fighter likes to be the laughing stock of the public. Nevertheless, the majority of firemen have neither the patience nor the desire to attempt to educate the public on the whys and wherefores of their calling. If they can be made to realize that through their own personal contacts, as well as through their public appearances in line of duty, while operating at fires, they have real opportunities to sell themselves and their department, they may view the subject differently.

We can conclude this chapter with this conviction: proficiency in fire service ventilation not only lowers fire losses for the public, it builds morale and self confidence for the fire service itself. And better than all this, it helps to keep fire fighters out of hospitals!

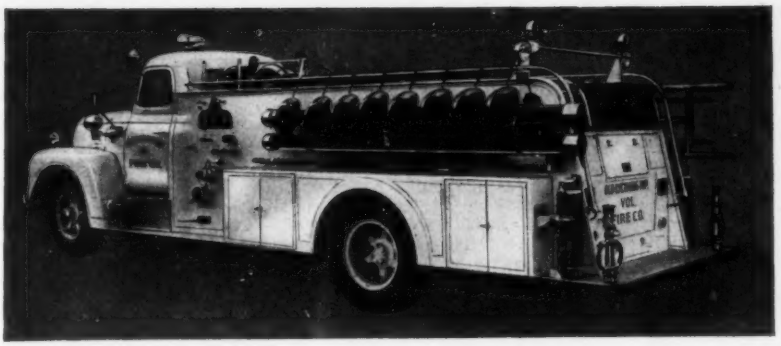
Radioactivity

(Continued from page 46)

bing and cleansing was at first applied, but it was only partly successful. The hair and legs were also contaminated. Clothing and shoes of the students were heavily contaminated and showed high alpha activity. Alpha activity can be very dangerous when taken into the body. Personnel effects, such as automobiles and homes, were also heavily contaminated. It was possible to trace the footsteps of some of the students into their homes and follow their movements inside houses by means of detection instruments. In some cases the seats of street cars and buses, on which the students traveled, could be singled out. In automobiles, the flooring, foot pedals and steering wheel were most radioactive.

The contaminated building was first entered three days after the spill in order to determine the extent of the contamination and to locate the primary spill. The survey group wore protective clothing such as rubber boots, rubber gloves, cloth hoods and rescue breathing apparatus. The spill was located and marked, and measurements were made of the contamination of the air and all surfaces. The air alpha activity was more than 3,300 times as great as the maximum permissible concentration and the air radonactivity was approximately 16 times as great as the maximum permissible level. Near the spill, beta-gamma activity at 1 foot above the floor was 20 milliroentgens per hour, which is approximately three times greater than the permissible intensity.

The extent of the contamination was not completely determined, but 12



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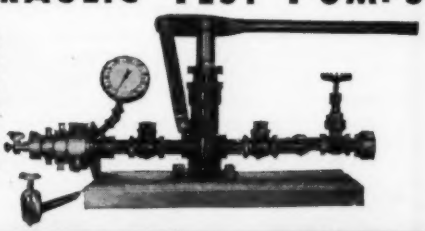
Easy to use — accurate — built for long, dependable service. See your Wooster Brass representative or write direct.



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WOOSTER, OHIO
A DIVISION OF FYR-FYTER CO.

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rooms, together with the halls and stairways, were highly contaminated; 8 rooms were moderately contaminated; 6 rooms were lightly contaminated, and 5 rooms were clean. Most of the clean rooms were locked at the time of the spill.

Air analyses were made during all phases of the decontamination work. Radon concentration exceeded maximum permissible level for the first two weeks after the spill. During the initial phases of decontamination operations, all personnel wore breathing apparatus but later on switched to the standard Navy respirator as the levels of radioactivity dropped.

In handling decontamination, students were carefully monitored at a decontamination center. All contaminated areas were thoroughly scrubbed with soap, followed by citric-acid solution, but this treatment was only partially successful. Later on, detergents were tried and found to be more successful. As far as clothing was concerned, it was found that wool could not be successfully decontaminated, but that cotton and other washable fabrics could be. Shoes were successfully decontaminated with the skin solution used above. Personnel effects, such as floor mats, seat covers, etc., could not be successfully decontaminated and were discarded. However, other surfaces were treated satisfactorily with the skin cleansing solution.

Vacuum cleaning was used initially for the rapid removal of loose contaminant and approximately 35% of the radium was recovered this way. Wet methods using liquids such as hot trisodium phosphate solution were used with excellent results. Concrete and wood surfaces were burned off with a blow torch and the residue removed. Radioactive waste was put into weighted drums which were sunk at sea.

Physical examination and breath radon samples were made of exposed personnel for some time after the spill and no harmful exposures were found. The building was re-opened three months after the spill, whereas the personal effects, homes and automobiles had been completely decontaminated within three days after the spill.

Editor's Note: The above material was summarized from an article in "Nucleonics" of Aug. 1953 and taken from the Oct. 1 Quarterly Bulletin of the Ontario Fire Marshal's Office.

Shuredry Green-Bak Covers will pass the test specified by the National Board of Fire Underwriters. They also carry the approved symbol of the Associated Factory Mutual Fire Insurance Companies.

Damage from water and smoke is cut down when SHUREDRY Green-Bak Salvage Covers are on the job. Only the finest quality, treated cotton duck, which is pressure impregnated by the exclusive Fulton dry-treatment, is used in SHUREDRY Covers. All seams are waterproof, and SHUREDRY Covers are light — pliable and easy-to-handle. For top dependability — specify SHUREDRY when ordering salvage covers from your Fire Equipment Dealers.

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ATLANTA . ST. LOUIS . NEW ORLEANS . SAVANNAH . DALLAS . LOS ANGELES . DENVER . MINNEAPOLIS . KANSAS CITY, KANS. . NEW YORK CITY . SAN FRANCISCO . PHOENIX . WINTER HAVEN, FLA.

Transportation of Flammables

(*Continued from page* 43)

explosive material was trucked in and out of Newport without a fire or explosion of any kind. This was due entirely, in my opinion, to the safety precautions taken by the Navy and the fire department.

Walter J. Flores
Chief, Fire Department
Allentown, Pa.

The only answer to the problem of the movement of trucks carrying explosives and flammable liquids is the bypassing or skirting of city limits.

We have not had any fires or catastrophies involving these trucks.

William Ruehle
Chief, Fire Department
St. Cloud, Minn.

We do not have control over the movement of trucks carrying flammable materials or explosives through the streets of this city.

We have not had any accidents involving such trucks.

The ultimate answer, in my opinion, is control by ordinance or legislation.

Kansas City

(*Continued from page* 44)

stresses importance to the individual of wearing masks. Written examinations reveal how much information students have absorbed. If necessary, additional time is devoted to the subject.

"It's just good business," said Chief Eikenbury, "to encourage firemen to wear masks. All the training is wasted if a fireman's health is impaired by inhaling too much smoke."

To demonstrate dramatically why firemen should wear masks, the department uses a "smoke house" at the training school. After a smoky fire is built in the 20-foot high brick structure, firemen scale a ladder to the top, descend through an opening, locate the fire and climb back out.

"Anyone who thinks he can do this without wearing a mask soon learns otherwise," Chief Eikenbury said. "We just let him try it once."

All in all, the Kansas City Fire Department has come a long way since the days of 1940. One thing is sure, Director Wornall said: "Smoke isn't going to keep our firemen from putting out a blaze. Our mask-training program has taken care of that."

News of the Manufacturers

(*Continued from page 54*)

Lightweight Hose Announced

Lighter, space-saving fire hose made with cotton-synthetic jackets especially for municipalities has been announced by The American Rubber Manufacturing Co., Oakland, Calif. This new hose is known as American Cotton-Synthetic Jacket Hose and is available in 400 and 600-lb. test.

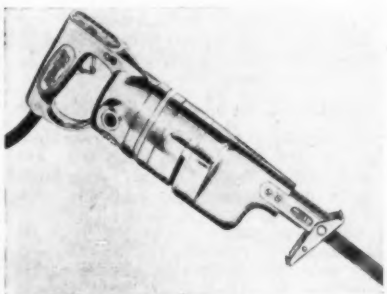
How cotton-synthetic jacketed American municipal fire hose (inner roll) compares with standard cotton jacket fire hose.

Like all other American municipal fire hose, this new hose has laminated natural rubber linings to provide maximum assurance against flaws and weak spots. This laminated lining, combined with a jacket woven of cotton and synthetic fibres, results in a hose that is light, strong and easy to handle. American states it weighs 18% less, has 27% less bulk, and is 50% stronger than their regular cotton jacket hose.

For easy identification, each length of American Cotton-Synthetic Jacket Hose has a red, white and blue stripe.

New Heavy-Duty Portable Power Saw

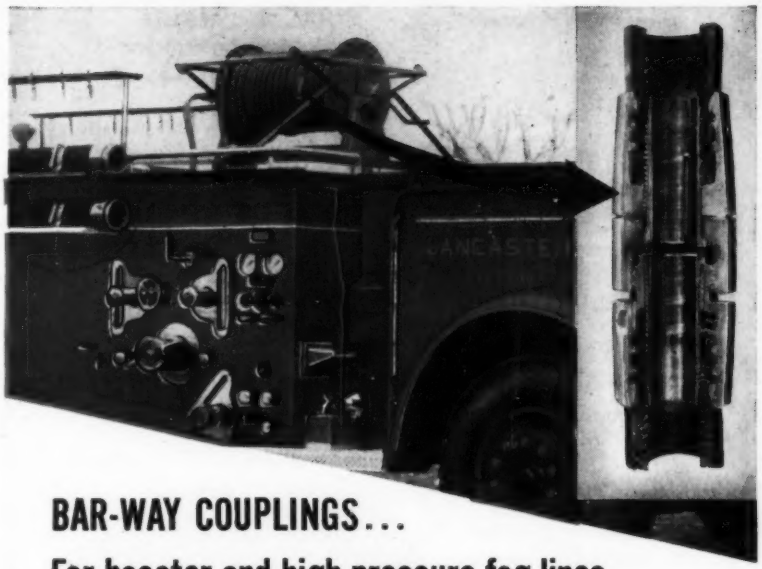
Designed particularly for heavy duty service, the Milwaukee "Sawzall" answers the need for a rugged special duty reciprocating type sawing tool.



New portable power saw.

Compact, light in weight, the Sawzall can be easily maneuvered about with one hand. It has a ¾-inch stroke and operates at 2250 strokes per minute. This tool cuts through wood, Transite, galvanized sheet, and other metals, wire nails, formica, masonite, and numerous other materials. The complete unit measures 14½ inches long and weighs 6¾ pounds.

It is powered by a heavy duty 110 volt universal type motor and is equipped



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- **FLEXIBILITY**—Reels smoother. Easily replaced. Nothing to catch on corners or underbrush.
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4. Light weight, durable, closely woven quality canvas. White or dark green color.
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throughout with lifetime lubricated ball, roller and antifriction bearings.

The unit is manufactured by the Milwaukee Electric Tool Corporation, 5368 West State Street, Milwaukee 8, Wis.

For Head and Face Protection

A new type protective hood has been introduced by Industrial Safety Specialties Co., Inc., Perkasie, Penn., which should find acceptance by municipal, industrial, airport and other fire forces.

Fireman's hood made of aluminized asbestos.

It is designed for head and face protection and is made of aluminumized asbestos with a hard hat, having adjustable hat band, and laminated safety glass visor set in an aluminum frame to give wearer unobstructed vision.

It is said the shiny aluminum surface will reflect over 80% of the heat away from the wearer. The entire hood is fireproof and weighs less than 4 lbs. It permits freedom of movement and there is ample room for breathing apparatus. Protection against falling objects is afforded by the hard hat.

Complete particulars may be had by writing the above company.

Kidde Forms Mexican Subsidiary

Establishment of a Mexican subsidiary by Walter Kidde & Company, Inc. (Belleville, N. J.) was announced December 16th, by John F. Kidde, company president.

Operating under a charter from the Mexican government, the new subsidiary will receive parts from the parent company as well as from local sources. It will assemble, charge, test, paint, and ship Kidde fire extinguishers to Mexican distributors, will maintain repair and recharging facilities, and will service the company's industrial fire detection and extinguishing systems.

John F. Kidde is president of the new subsidiary and Carey H. Nelson is vice president and general manager. Mr. Nelson is also president of Kidde Sales and Service, Inc., of Houston, Texas. Offices of Walter Kidde de Mexico, S.A., are located at Calle de 13 PTE 330, Santa Maria Insurgentes, Mexico City, D.F.

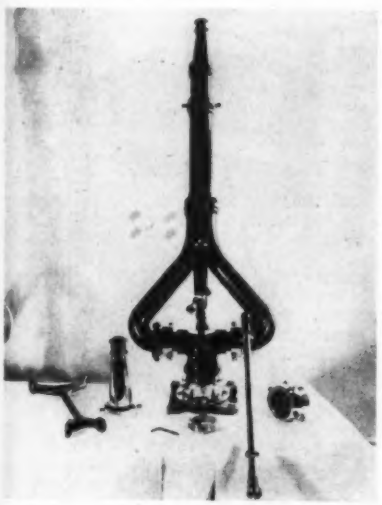
New Neophrene O.D. Clothing Resists Chemicals and Acids

New neophrene olive drab clothing for use by firefighters has been developed by M. L. Snyder & Son, Boston ave., Philadelphia 25, Pa. It is known as "Evergreen neophrene clothing" and comes in two weights, heavy for severe work and long service and medium for something thinner, cooler and lighter.

The clothing is tough, yet comfortable and flexible. It is coated inside with neophrene, after seams are sewn, so stitches will not snag, peel, crack or wear out easily. It is reported the clothing provides protection from fresh and salt water, acid, paint, grease, oil, etc. The material is easily cleaned and, according to the maker, the neophrene coats can be put away year after year without their getting hard or sticky.

New Eastman Standpipe Turret

What with the interest centered on heavy duty fire control equipment these days of potential "multiple conflagrations" and "fire storms," the introduction by the old established firm of Samuel Eastman, Inc., Concord, N. H., of its Model 10 Deluge gun should receive more than passing attention.



New Model 10 deluge gun.

The device is designed especially for 2½ in. standpipe and it can be mounted permanently on any apparatus, trailer, impromptu hose wagon or the like, to deliver 1¼, 1½ or 1¾-inch streams.

New Accessory on Equipment Catalog

A new 66-page catalog on modern accessory fire protection equipment is available for industrial, municipal and volunteer fire departments.

It contains illustrations and descriptions for more than 475 items, with convenient alphabetical and numerical indices for easy reference. General classifications of items covered include: Nozzles; valves; hose; hose fittings and accessories; pumps; firemen's tools and clothing; ladders; warning and signal devices; first aid kits; oxygen and air masks; breathing apparatus; and safety equipment.

The catalog will be sent without

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This is the modern, new, improved resuscitator that does more for your patient. Simple and effective in operation. Dependable.

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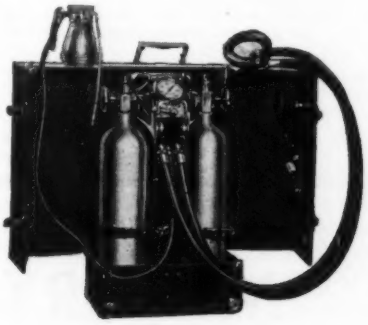

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is extremely effective, providing better ventilation to the lungs and aid in the flow of blood through the body. The newest rookie in your squad can start it breathing for your patient in a matter of seconds.

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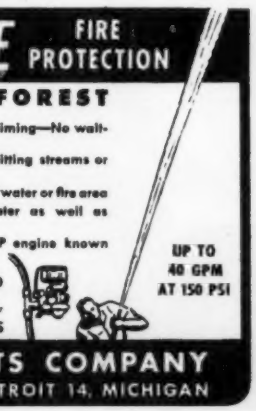

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charge upon request on your letterhead to: The Fyr-Fyter Company, 221 Crane Street, Dayton, Ohio.

Spader Joins Gamewell

The Gamewell Company, Newton Upper Falls, Massachusetts, has announced the appointment of John E. Spader to the position of Sales-Engineer in their New York office.

Mr. Spader comes to Gamewell with a well-rounded sales background, having been associated with U. S. Rubber Company and The B. F. Goodrich Company.

He graduated from St. Lawrence University, Canton, N. Y. with a B.A. degree and is a veteran of World War II, serving in the European Theater of operations with the 44th Infantry Division.

Persons in the News

Chief Paul Heinz Retires

One of the nation's foremost and most colorful fire chiefs, Paul P. Heinz of New Haven, Conn., retired from active service on Dec. 29th, 1953, after 12 years as head of the New Haven Fire Department.

Chief Paul P. Heinz

Chief Heinz, who established the New Haven Fire Department as one of the most progressive and outstanding organizations of the fire service, came up through the ranks. He was made substitute fireman in May, 1916; permanent fireman in January, 1917; promoted to lieutenant in June, 1922; captain in July, 1924, battalion chief, in March 1926. In 1934 he became Fire Marshal at which time his efforts at fire prevention attracted widespread attention. He was appointed Chief on January 1, 1941.

In his first General Order to the department, Chief Heinz said "we must strive to perfect our professional skills, and we must search constantly for improved methods and appliances. Above all we must preach the doctrine of early detection." And the chief wasted no time putting these precepts into practice.

High point of his program for revitalizing and overhauling the entire New Haven department, was the establishment of an educational plant which has become the pattern for similar train-

ing projects throughout the nation. Taking his cue from the Navy's training experience—incidentally Paul Heinz served a Navy hitch in World War I—he and his aides of the department created the first extensive fire school for "training by doing" i.e., actual fire extinguishment. The New Haven Fire Department Training Ground became a Mecca for fire officers and other personnel from all over the country.

Recognizing the value of the principles of training as defined by the New Haven School, the 1949 Connecticut Legislature appropriated $40,000 for expansion of its facilities so as to make them more available to fire fighting organizations throughout the State. An auditorium and other improvements were added and each year in May the New Haven Fire Department is host to the Connecticut Fire College and visiting fire fighters who come by hundreds to attend its Annual Field Day, at which the newest developments in fire fighting techniques and equipment are demonstrated.

Chief Heinz, always conscious of the value of good public relations, boosted his City, and its Fire Department, whenever and wherever possible. He and his men were quick to try anything new. Every problem of fire control and suppression was a challenge to him. And in his endeavors he never spared himself to carry the message of better firemanship up and down the land. It was nothing for him to take his aides—and even some of his department's equipment—on long journeys to cooperate with fellow fire fighters in educational programs.

A driver when it came to getting things done, Chief Heinz also has his convictions on various phases and factors of fire prevention and protection. This is expressed in his experiments in communications, with the use of teletype radio, and his efforts to install fire detection systems in all places of public meeting and the like. It is expressed in his passion for such improvements as water fog, wet water, dry chemical and for modern respiratory protective breathing apparatus.

His leadership has brought him prominence as a city official where his enterprise has been put to good use. He presently heads the city's foremost club and he is active in various fraternal and civic groups, most of which have given him signal honors.

The retiring chief has not announced his future plans, but his hosts of friends throughout the fire service hope that he will continue to manifest interest in advanced fire suppression.

Chief C. M. Johnson Honored

Fire Chief C. M. Johnson celebrated his 50th year with the Knoxville, Tenn., Fire Department on the night of November 18th, last, aided and abetted by a capacity crowd of local businessmen and members of the fire department. The affair was held at the Andrew Johnson Hotel, and the high point of the evening was the presentation to the Chief of a beautiful TV set by Mayor George R. Dempster.

It was on Nov. 18, 1903, that Calvin M. Johnson decided to become a fireman. In January of 1904, the rookie firefighter had a narrow escape from death when a roof fell—and decided then to quit. But jobs weren't so easy come by, in

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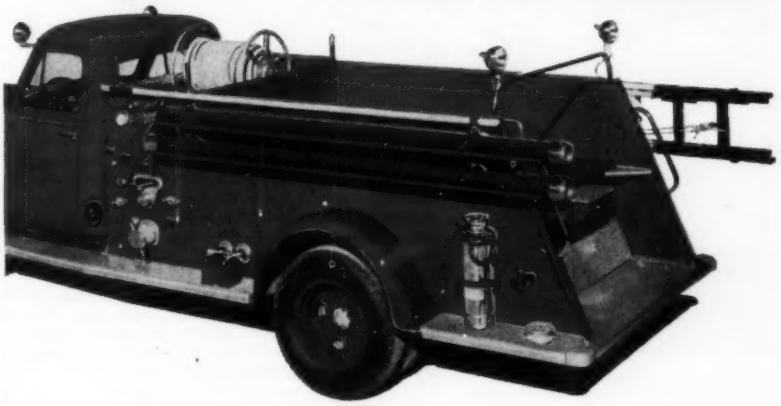

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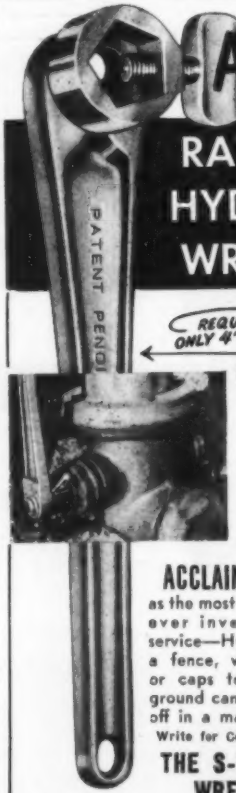

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those days, and he stuck, to outlast all the 1903 firemen except Assistant Chief Bill Sams, now retired. The rest have passed on.

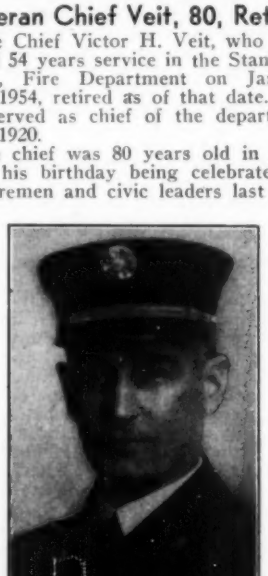
For the last 24 years, Chief Johnson has headed the department as chief. He has seen the paid department grow from 30 men to its present 180, and he has been a major factor in that growth.

His climb up the promotional ladder was steady. He was made captain in 1909; he became assistant chief in 1918, and reached chief's status in 1929.

Veteran Chief Veit, 80, Retires

Fire Chief Victor H. Veit, who completed 54 years service in the Stamford, Conn., Fire Department on January 14th, 1954, retired as of that date. He has served as chief of the department since 1920.

The chief was 80 years old in June, 1954, his birthday being celebrated by 200 firemen and civic leaders last July.



Chief Victor H. Veit
(from a photo taken some time ago)

While employed at Yale & Towne Mfg. Co., Stamford, he became a call-man of the department Jan. 14, 1895. In 1901 he was named captain of No. 1 Engine, and in 1905 was one of four men named assistant deputy chiefs.

At the opening of Stamford's Central Station in 1915, Veit was assigned to it as deputy chief, his first salaried job in the department. In 1920 he succeeded to the post of chief upon retirement of chief Harry W. Parker. At that time the central station boasted 35 paid officers and men and included a Pope-Hartford, two American - LaFrance pumpers and a LaFrance 75-foot ladder truck. The old call force was abolished with the opening of this headquarters.

Today the department has 111 officers and men, all paid. The two-platoon system was installed in 1919 and, later, the three-shift system. In August, 1950, the 56-hour work week went into effect.

Chief Veit has always maintained a progressive viewpoint in firemanship. He has consistently preached fire prevention, good training programs, and believed in cooperative mutual aid effort. He was one of the organizers of the Fire Chiefs Emergency Plan of Westchester County, N. Y., of which he was made honorary life member. Later he sparked the development of the Fairfield County (Conn.) Fire Chiefs Emergency Plan. He became its president 21 years ago. He is a member of

the New England Association of Fire Chiefs, The Connecticut Fire Chiefs Club, and numerous civic and fraternal organizations. The chief has three sons, one of whom, Howard, is superintendent of the Stamford Water Company.

The veteran officer has not announced his plans for the future.

Hartenstein Heads Philadelphia C.D.

Deputy Fire Commissioner Paul B. Hartenstein of Philadelphia has been appointed by Mayor Clark to head the city's Civil Defense.

Hartenstein has been deputy fire commissioner in charge of fire prevention and personnel since March 1, 1952. During World War II he was director of the Philadelphia Council of Civil Defense.

Orchids to Air Force Rescuer

Sgt. Robert W. Fitz, of Wakefield, Mass., was a call fireman of that community's fire department before he was drafted into the Air Force and sent to Omaha, Neb. But he retained the instincts of the fire fighter and proved himself a hero recently when he rescued a trapped child in an apartment house fire in that city.

The 21-year-old former fire fighter and an Omaha fireman braved flames in a desperate effort to reach a 5-year-old child, reported missing in a flaming apartment house. When Sgt. Fitz arrived at the fire, he met several fire fighters who had been searching for the little boy, and retired only after nearly being trapped and overcome themselves.

The Sergeant grabbed an axe and fought his way into the building, located the boy, and brought him out. The little victim was rushed to the hospital but died en route, from heat and suffocation. Reports do not indicate the extent of injuries suffered by the Sergeant.

The Sergeant has been a member of the New England Association of Fire Chiefs since June, 1950.

Air Force Fire Chief Has Many Attainments

Fire Chief C. L. Errett of the Eielson, Alaska, Air Force Base Fire Department, has quite a colorful background. Mountain climbing, which rates high in his life's ambition, is but one of his many facets.

Chief Errett, just turned 48, and recently promoted to Major in the Army Reserve, is a former member of the Los Angeles Fire Department. In 1942 he enlisted into the Army and was assigned to a Mountain Division as an instructor in mountain assault climbing at Camp Hale, Colorado. All of which was up his alley, for the fire fighter already had become proficient as a cliff-scaler around his home area.

Then he attended Officer's Candidate School at Fort Bennington, Ga., and emerged as a Second Lieutenant being assigned to the 10th Mountain Division as instructor in ski tactics.

In December of '44, he attended the PMG School and Civil Affairs Training School at Chicago University, where he studied the Japanese language. He returned home to be separated from the

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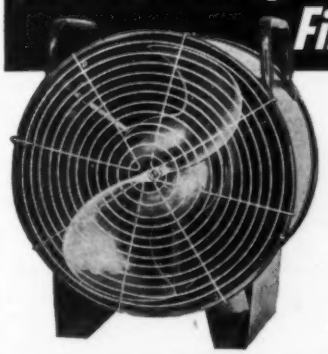

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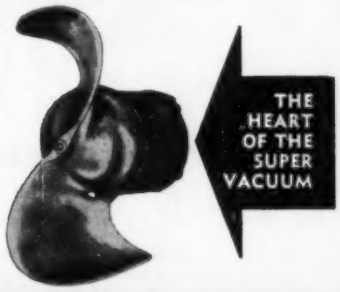

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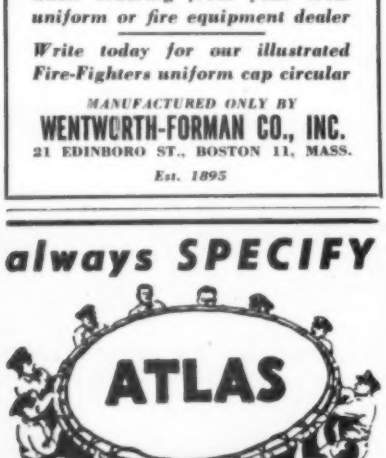

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service in 1946 with rank of Captain in the Infantry Reserve.

During the next couple years he was back with the Los Angeles Fire Department, from which he retired about 1951 with 22 years service to his credit. Soon after he accepted the post as Chief of the Eielson AFB Fire Department, Alaska.

Alaska and the Base is a long way from the States, but the Base fire force is about as near perfection as is any Stateside group of firefighters.

Obituaries

Chief E. P. Kohout Dead

Chief Emil P. Kohout of the Cedar Rapids, Iowa, Fire Department, died suddenly on December 5th, 1953.

"Butch" Kohout, as he was affectionately known, joined the department in December, 1918, and became its head in June, 1932, after filling nearly every position in the organization.

Commenting on his passing the Cedar Rapids Gazette said: "He was the kind of a man and the kind of a public servant who could be an inspiring example to citizens everywhere. . . . He learned his job from the ground up and kept himself abreast of the changing techniques in fire safety and fire fighting. . . . He inaugurated a training routine for recruits that is the envy of all who have studied it. . . . His inspection bureau was tops. . . . He believed in doing everything possible to prevent fires . . . and was instrumental in strengthening the city's ordinances to force laggards to observe minimum fire safety standards. . . . He wouldn't tolerate politics in his department, nor did he hesitate to speak out against it wherever it threatened to interfere with making people and property safe from fire. . . . Such a man was Chief Kohout. His leadership was based on integrity, sincerity, devotion to duty, righteousness of cause, thoroughness of preparation, preparedness for every eventuality and a high sense of public duty."

Chief Kohout was long a member of the International Association of Fire Chiefs and other fire service organizations.

Chief Harold Nickerson Dead

Harold E. Nickerson, chief of the New Brunswick, Me., Fire Department since 1942, died December 14th, 1953, in a Portland Hospital at the age of 63. He was well known among New England fire chiefs.

James Kay of Blackinton Dies

Funeral services for James E. Kay, an official of V. H. Blackinton and Company, Attleboro Falls, Mass., and widely known among New England fire fighters, were held Dec. 11th, in North Attleboro, Mass. Mr. Kay lost his life in an automobile accident. He was on a deer hunting and fur buying trip (he was president of the Kay Fur Company as well as a leading executive with Blackinton), when his car struck an abutment of a bridge over the Exeter River, near Exeter, N. H. He was badly injured but refused the aid of motorists who happened along and saw the accident. It is believed that, dazed by his head injuries, he stumbled into the river and was drowned. He was 41 years of age, married, and the father of three children.

Mr. Kay started his career with Blackinton in 1941 when he became production superintendent of the badge department, following in the footsteps of his father who had worked for Blackinton for almost 50 years.

In 1948 he was promoted to the sales department where he served until 1950 when he became assistant sales manager of all Blackinton police and fire badge sales.

His wide popularity was attested at his funeral services, where an unprecedented number of mourners attended. Included were friends not only in the fire service, but fur men from New York and Canada, trappers and sportsmen, as well as fellow-workers and neighbors.

Besides his interest in his business enterprises, Jimmy Kay was a keen sportsman. Eulogizing him, Win. Brooks, writing in the local press, concluded with this statement: "Though he was buried in Mt. Hope, something of Jimmy Kay will live a long time along the windswept beaches wherever men of good will and the generous heart may gather."

Death Claims DeCourcy of Seagrave

James DeCourcy, who long had been a sales representative of The Seagrave Corporation, died December 29, 1953.

He represented the company in Kansas City, Missouri; Chicago, Illinois, and for the past twelve years, in the State of Ohio.

Hotel Smoker Faces Court in Benton Harbor

Fire Chief Maurice Shepherdson of Benton Harbor, Mich., filed a complaint against a resident of Mary's Hotel, that city, who allegedly set fire to his mattress when smoking, then delayed two hours before calling firemen.

The complaint was filed under a state law, Sec. 496, Michigan Act. No. 17, reading: "Any person who shall carelessly, recklessly or negligently set fire to any hotel, rooming house, lodging, house, or any place of abode, or to any bedding, furniture, curtains, drapes or other furnishings therein so as to endanger life or property, in any way, shall be guilty of a misdemeanor."

Firemen were called to the hotel at 4:00 A.M. on Dec. 12th, when the bedding flamed up. An aerial ladder was run up and the fire doused with a booster line. Other firemen were forced to don masks in their effort to penetrate the burning room from the hotel corridors. The halls of the hotel was filled with smoke, endangering the lives of occupants.

It was disclosed that the accused started the fire while smoking and said he had tried to extinguish the flames "about six times," using at least three fire extinguishers, which firemen found near his room. He thought he had completely doused the fire, and was sitting in the hall, talking with an unidentified friend, when the mattress burst into flames again.

Convention Dates

Feb. 23-26—FIRE DEPARTMENT INSTRUCTORS' CONFERENCE. Annual meeting, Memphis, Tenn. Director, Richard E. Vernor, P. O. Box 1089, Chicago 90, Ill.

Apr. 25-27 — NEBRASKA STATE FIRE SCHOOL. Annual meeting, Grand Island Airport, Auditorium Hangar No. 3, Grand Island, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb. School Director, Otto B. Johannes, Columbus, Neb.

Apr. 26 - 30 — MINNESOTA STATE FIRE SCHOOL. Annual meeting, Agricultural Institute, Farm Campus, University of Minnesota, St. Paul 1, Minn. Co-Chairmen, Dr. J. O. Christianson, University of Minnesota, and Leonard C. Lund, Deputy Commissioner, Fire Marshal Department, St. Paul 1, Minn.

May 2 — NEBRASKA REGIONAL FIRE SCHOOL. Spalding, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb.; School Director, Otto B. Johannes, Columbus, Neb.

May 16 — NEBRASKA REGIONAL FIRE SCHOOL. Beatrice, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb.; School Director, Otto B. Johannes, Columbus, Neb.

May 18-21 — IOWA FIRE SCHOOL. Annual meeting, Exhibit Hall, Iowa State College, Ames, Iowa. Supervisor Firemanship Training, Mark Brosier, Engineering Extension Service, 110 Marston Hall, Ames, Iowa.

May 22-23—NAUMEE VALLEY FREE FIRE SCHOOL. Annual meeting, Napoleon, Ohio. For information contact Earl Campbell, Box 164, Napoleon, Ohio.

May 23 — NEBRASKA REGIONAL FIRE SCHOOL. North Bend, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb.; School Director, Otto B. Johannes, Columbus, Neb.

June 6 — NEBRASKA REGIONAL FIRE SCHOOL. Bloomfield, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb.; School Director, Otto B. Johannes, Columbus, Neb.

June 6-8—NEW YORK STATE ASSOCIATION OF FIRE CHIEFS. Annual meeting, Hotel Martinique, New York, N. Y. Secretary-Treasurer, Ward A. Bohner, Fire Coordinator, Oneida County, Fire Headquarters, Utica, N. Y.

June 13 — NEBRASKA REGIONAL FIRE SCHOOL. Gordon, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb.; School Director, Otto B. Johannes, Columbus, Neb.

June 16 — NORTHWESTERN OHIO VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Ada, Ohio. Secretary, Earl Campbell, Box 164, Napoleon, Ohio.

June 20 — NEBRASKA REGIONAL FIRE SCHOOL. Chappell, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb.; School Director, Otto B. Johannes, Columbus, Neb.

June 21-23—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. Annual meeting, Colorado Springs, Colo. Secretary-Treasurer, Chief Ray Tiller, 319 East 5th Street, Waterloo, Iowa.

June 21-24—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. Annual meeting, The Wentworth by the Sea, Portsmouth, N. H. Secretary, John W. O'Hearn, 206 Mt. Auburn Street, Watertown 72, Mass.

June 21-24—ILLINOIS FIRE SCHOOL. Annual meeting, Gregory Hall University of Illinois, Champaign, Ill. Registrar, Chief Roy W. Alsip, Box 8, Champaign, Ill.

June 27—NEBRASKA REGIONAL FIRE SCHOOL. Cambridge, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb. School Director, Otto B. Johannes, Columbus, Neb.

Aug. 16-19—CANADIAN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Saskatoon, Sask. Secretary-Treasurer, Allan H. Clark, Chief of Fire Department, Lakefield, Ont.

Aug. 23-26—PACIFIC COAST INTER-MOUNTAIN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Long Beach, Cal. Secretary-Treasurer, Jay W. Stevens, Merchants Exchange Building, San Francisco, Cal.

Oct. 12-14—ILLINOIS FIREMEN'S ASSOCIATION. Annual meeting, Evanston, Ill. Secretary, R. W. Alsip, P. O. Box 8, Champaign, Ill.

Oct. 18-20—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Lincoln, Neb. Secretary-Treasurer, Russell D. Salak, P. O. Box 312, Schuyler, Neb.

Oct. 18-21—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual meeting, Houston, Tex. Secretary-Treasurer, Chief Daniel B. Tierney, 8 Robbins Road, Arlington 74, Mass.

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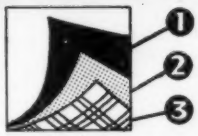

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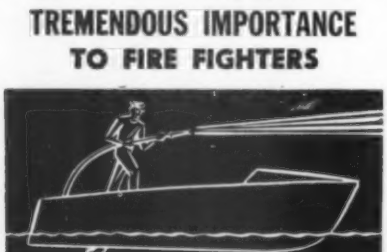

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The WATCH DESK

Overhauling the firemanic news of the day

by ROI B. WOOLLEY

Sirens Screech But Nursery Thrives in L. I. Firehouse

The East Meadow, L. I., N. Y. firehouse is a busy place these days what with firemen downstairs attending to fire and emergency calls and mothers upstairs superintending 30 children enrolled in a new community project, the community firehouse play group.

For three months, 38 enterprising young East Meadow mothers looked for a place for a non-profit nursery for children 3 and 4 years old. Then early in November, they enlisted the aid of the 25-year-old East Meadow Fire Department to start a nursery in the organization's huge trophy and meeting room over the garage where five pieces of fire equipment are housed.

The only crisis, so far, it is said, has been caused by the shriek of the fire siren. When it lets go, young and lusty lungs likewise let loose. The children want to run downstairs and watch the pumper, ladder truck and all the apparatus roll out. But Fire Chief Michael J. Kostynick has put his foot down on that.

The only "rent" the community pays to the firehouse is a promise to keep the youngsters away from the equipment. Tuition for each child in the play group is $12 a month, which pays the salaries of two qualified nursery school instructors and buys fruit juice and some equipment.

The fathers have made much of the nursery equipment; the mothers have held a cake sale and card party and sold Christmas cards to raise money for the project. As for the vamps, they at least have the pleasure of knowing they've lent a hand to a worthy cause.

* * *

F. P. Week Demo Too Much the Real McCoy!

Repercussions of Fire Prevention Week continue to trickle in,—not all of 'em according to Hoyle.

The latest comes from Vancouver, B. C., via an unnamed contrib', which recounts the unscheduled twist taken by a "rescue demonstration" staged by members of the local fire department.

To provide a fitting dramatic climax to a fire control exhibition, some of the blazebeaters were supposed to be trapped by a fire, and to be rescued, in true mellerdrama fashion by their mates.

To add reality to the drama and create the necessary illusion that the building which was to be the "stage" for the show was really on fire, smoke bombs were placed on second-story ledges and one was placed under a hole in the roof, inside the structure. These were to be touched off at the appropriate time amid fanfare and the "charge of the rescue brigade" into the smoke filled building.

The illusion turned to stark reality when the men inside the building found to their consternation after touching off the "props" that the hole in the roof wasn't big enough to carry off the smoke.

The victims had two options to avoid being overcome by the smoke; to run out the front door into the arms of the spectators, thus spoiling the show, or forcing their way through the flimsy wall at the back of the building.

They chose the second course. One man made it, but the other was overcome by smoke and had to be given the inhalator treatment.

Chided the Vancouver Fire Marshal's publication, "*Fire Service News*": "Realistic demonstrations are of great value, but greater care must be observed where life is involved."

* * *

A "Splash in the Pan"—This TNT Test!

Out Louisville, Ky.-way lives Jules Kaplan, aged 17. Jules, like many another lad, loves to dabble in chemistry. And in the week ending Nov. 14th, Jules said he could make nitro glycerine—after having had a year in school chemistry plus a well thumbed textbook to guide him.

Jules experiment began in the basement of his home, and ended in the Ohio River. In between, there was considerable dither and ado, not to mention near-panic.

Jules borrowed the ingredients for his chemistry lesson from School on the 12th, and went to work in his basement lab'. The next day he began brooding about his handiwork. The more he brooded, the more he doubted the outcome. So he called the Fire Prevention Bureau of the Louisville Fire Department, and asked what to do.

Inasmuch as the Bureau had no nitro experts handy, it lost no time calling Fort Knox where they knocked off guarding the nation's gold storage long enough to advise immediate evacuating of the eight persons in the house.

A little later, two fire cars, followed by a jeep loaded with bomb experts from the Army post, pulled up, as you might say "Post Haste." They poured Jules' frothing liquid into a metal pail filled with sawdust, carried it to the fire car, and headed for the River, hellbent, where a Coast Guard launch was waiting.

A safe distance from shore, the pail was lowered into the drink at the end of a 50-foot rope, amid "silence that you could hear," according to Fire Inspector Franklin Morgan, who added, after the strange concoction was duly dunked in the Ohio River, "and then you could hear seven sighs of relief."

At home Jules also breathed freely again, for the first time in ages, it seemed. But he added, "It hasn't dampened my enthusiasm for science."

* * *

Red-Faced Firemen

We won't mention the place except to say this occurred down Virginia-way, because the Brothers may be feeling a mite down-in-the-mouth right now, following their *faux pas*, as they say in Paris. But take it from us, and the score or more of contributors who shot in this item, it really happened!

The members of the fire department in question hustled to respond to an alarm of fire. They found the fire without difficulty and doused it thoroughly with chemicals. Nice job was done of it, too, so we're told.

Unfortunately, soon after the "douse," the lads discovered the blaze they'd operated on had been burning brightly for five years! Uh huh—seems it came from a pipe that was the means of disposing of waste gas at a sanitation

commission plant. In short, they burn the gas as it is generated in the sewage treatment plant, hence the continual blaze.

The sequel? Oh, well—the fire fighters helped clean up the chemical mess—and re-started the fire (and retired with "muffled bells").

* * *

Female Fire Fan Fined as "Line Breaker"

Overzealous fans who get in firemen's hair are usually of the male variety. It remains for Milwaukee, Wis., to claim the first female eager-beaveress we've had reported in a long time.

She is Miss Alice Schram of that city, who wouldn't scram back of the police fire lines at the recent $150,000 Town Club fire that city, when ordered by an officer.

After a patrolman noticed the fan-ess edge through the barriers no less than six times, he lost patience, and arrested her. She faced the judge next day under charge of disorderly conduct and said, in her defense, "I went through, but I don't think it was six times."

"What will you do the next time you go to a fire?" asked the judge.

"Ill stay back," said Miss Schram.

The judge said he felt the young lady had learned her lesson and suspended sentence.

* * *

Surprise for Teaneck Firemen

Teaneck, N. J., firemen opened up a closet while battling a dwelling fire the night of Nov. 8th and came face to face with, of all things, a mummy, said to be 3,000 years old.

We dunno just what the crew who opened up the closet felt about it, but according to press reports, they were "somewhat startled" to bump into what they described as "petrified human of unknown origin."

Not so the police, who said they knew all about the "stiff." Seems that William Small, retired Bergen County game warden, at whose home the fire occurred, collects mummies as a hobby. Where he got the 3000-year-old specimen, deponent saith not, but Teaneck blazebeaters would just as soon have no more fires in the Small 'mummery'.

Thanks, WILSON DAVIS.

IAFC Directors Meet Feb. 15th

The Board of Directors of the International Association of Fire Chiefs will meet February 15, 16 and 17, 1954, at the Hotel Martinique, New York City.

At this meeting plans will be formulated for the coming year, including preliminary arrangements for the 1954 Conference, which will be held in Houston, Tex.

It is announced that the Headquarters for the 1954 Conference will be the Rice Hotel. The exhibits will be located in the Coliseum Main Arena. Meetings will be held in the Coliseum Music Hall. The date of the Conference will be October 18, 19, 20 and 21, 1954.

The Association's new general manager, John D. Gerletti, will be present at the Board Meeting. He takes up his duties as general manager on February 1, 1954. He has been Associate Professor of Public Administration at the University of Southern Colorado. In this capacity he was co-ordinator of the Fire Administration program which was conducted with the cooperation of the University of Southern California and the California Fire Chiefs Association.

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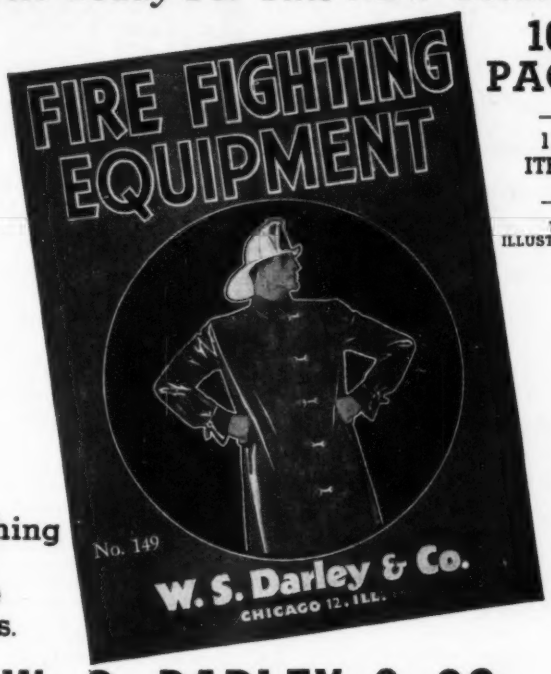

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Testing Carbon Dioxide Cylinders

To the Editor:

We are interested in testing carbon dioxide cylinders and valves as used for fire extinguishers, both separately and when assembled. We would appreciate your supplying us with the specifications and methods employed by American fire departments.

S. L.

Answer: The U. S. Bureau of Explosives and the Interstate Commerce Commission regulations covering all sizes and types of carbon dioxide cylinders include the following provisions:

1. Every new cylinder is hydrostatically tested to a minimum pressure of 3,000 pounds before it is stamped I. C. C. with numbers indicating the month and year of the approval test date.

2. All empty cylinders to be recharged whose test date exceeds five (5) years must again be tested and withstand, without leakage, a minimum hydrostatic pressure of 3,000 pounds before they are recharged and stamped with a new approval test date. This requirement only applies to empty cylinders being recharged and does not mean that fully charged cylinders must be emptied once every five years and re-tested, restamped and recharged.

3. Carbon dioxide cylinders that have been in a fire or damaged must be returned to the manufacturer for a reheat treatment and then withstand a 3,000-pounds hydrostatic test before they are restamped with approval test date. If they fail, they are rejected and scrapped.

4. Every carbon dioxide cylinder must be fitted with a valve having a safety pressure relief that will operate at a lower pressure than the minimum test pressure of the cylinder itself.

5. The maximum filling density permitted with carbon dioxide cylinders is 68% of the cylinder's water capacity. This applies to all size cylinders.

The following instructions relate to the testing of extinguisher valves for leaks:

"During test no hose or other equipment must be attached to the valve. The small hole in the control head connection which leads to the drilled passage must be plugged to keep water from entering. Water in this passage or in the piston section would freeze in cold weather and keep the valve from operating, making the fire extinguisher useless. Do not use wood force plug as it may break off and plug the hole. The factory uses a tapered plastic plug about one and one-half inches long. Test the cylinder for leakage by filling control head outlet with water; also place gas outlet under water. CAUTION: Do not submerge entire valve. If any bubbles are detected, they may be the result of the escape of trapped air, not leakage of the valve. If any bubbles appear on retest, valve leakage may be due to foreign matter on primary check or secondary check. Determine if bubbles issue from primary check or secondary check. If leak is from control head connection, trip the primary check with a screwdriver. The escaping gas may clean the seat and the primary check may then return to a good seat. If leak is from the discharge outlet, the secondary check is leaking. In either case, the valve will have to be disassembled, inspected, and assembled. Remove all water and fill in recharging data on the record that is attached to each extinguisher. Place thread protector over control head connection of the fixed units and install locking pin and seal wire on the portable unit.

Pump Capacity

To the Editor:

Is my solution to the following problem correct?

A pumper is rated at 1,000 GPM at 160 pounds. How many effective 1⅛-inch streams can it supply if each line contains 400 feet of 2½-inch hose and 45 pounds nozzle pressure

My solution is as follows:

The nozzle at 45 pounds nozzle pressure discharges 251 gallons per minute.

Friction loss ($2 \times 2.51 \times 2.51 + 2.51$) = 60 pounds.

Pump pressured required is 60 + 45 = 105 pounds.

$$\text{Discharge at 105 pounds} = \frac{1{,}000 \times 160}{105}$$

= 1,523 gallons per minute.

Then 1,523 ÷ 251 = 6 streams.

On figuring nozzle or engine pressures for two or three separate lines supplied by a single pumper, do you solve as you would for a single line?

On Page 145 of "Fire Service Hydraulics," you state that the openings in the Bresnan Distributor are equivalent to a 1⅝-inch nozzle and on Page 95 of the "Fire Chief's Handbook" you state that openings in a Bresnan distributor is equal to approximately a 1¾-inch nozzle. Which is correct?

F. R.

Answer: The method you follow in solving for the number of streams which a 1,000-gallon pumper could deliver at 105 pounds engine pressure is theoretically correct. Actually, it would probably be unable to deliver the number your answer indicates without the help of considerable hydrant pressure.

When the discharge pressure of a

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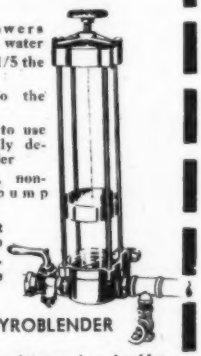

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pumper is reduced, the pumper can deliver more water by speeding it up, but there is a limit to the speed which a pump can safely attain.

In solving problems where lines of different lengths are fed by the same pumper, we solve these problems each as a separate calculation. In each case the pump pressure would be the same.

However, if the outlet on a pumper were throttled down for one of the lines, then the above statement would not hold. But ordinarily such problems do not include partially closed discharge gate and therefore the different parts of the problem would be solved independently of each other.

If, on the other hand, lines from a pumper are siamesed, then it may be necessary to combine them into a single line, as you have indicated.

With reference to the area equivalent of a Bresnan distributor, unfortunately there are several Bresnan distributors on the market today, and the discharge ports are not of the same diameter in each.

You will probably understand this from the fact that different combined areas are given in "Fire Service Hydraulics" and in the "Fire Chief's Handbook." It happened that two different makes of Bresnan distributors were involved in these two figures.

Pump Discharge at Different Pressures

To the Editor:

On Page 681 of the Crosby-Fiske-Forster "Handbook of Fire Protection," the statement is made: "Parallel operation provides a discharge equal to the sum of the rated capacities of the two pumps at the pressure for which each pump was designed." Also, on this page, is the statement: "In series operation the output is equal to the rated capacity of either pump at a pressure equal to the sum of the rated pressures of the two pumps." Now, in a Class A pumper, delivering 1,500 gpm at 150 psi, we are expected to deliver 50% of capacity at 250 psi operating at pressure position. But how can there be a middle ground, that is, to deliver 70% capacity at 200 psi? Isn't this position self-contradictory? The pumps would have to be in pressure to operate at 200 psi. But, when in pressure we can only get an output equal to the rated capacity of either pump, in our case then, only 750 gpm and not 1,050 gpm.

Our pump operator's manual is definitely in favor of operating the pumps in pressure whenever called upon to pump at pressures over rated capacity.

So, if this is the case, where is that extra water coming from at 200 psi?

Answer: Specifications for centrifugal fire pumpers of the parallel series type state: "The pump should be capable of operating at 'capacity' rating at a motor speed within 80% of the peak speed, and at 'pressure' rating within 90% of the peak motor speed."

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Fig. 164AN

4½" swivel female x two 2½" male Gated Siamese. Quick opening, ¼ turn valves.

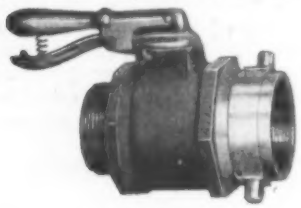

Fig. 163

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By "peak motor speed" is meant the speed at which the maximum horsepower is delivered.

Thus when a pump is operated to deliver water at 200 pounds pressure, it is expected to give 70% of its rated capacity. Then when the pressure is increased to 250 pounds, the pump is expected to give 50% of its rated capacity. The variation in discharge at 200 pounds and 250 pounds is secured by varying the speed of the pump (and motor).

If you examine the performance curve of a centrifugal parallel series pump, you will appreciate that the power and the pump speed do not maintain a given ratio, or proportion.

To sum it up, the pumps are used in parallel to get capacity at 150 pounds; they are used in series to get 70% and 50% capacity at 200 and 250 pounds respectively. To produce the higher pressure at 50% capacity rate, the pump is speeded up, but should not exceed, as noted previously, 90% of its peak motor speed. When delivering 70% capacity at 200 pounds, it should not exceed 80% of its peak motor speed.

Pump Performance

To the Editor:

In order to establish a starting point, I shall take the liberty to refer to Example 125, Page 98, "Fire Service Hydraulics," pertaining to the selection of proper class of pumper and pump capacities, that should be chosen to deliver 75 pounds nozzle pressure, using 1⅛-inch tip. Discharge is 324 gpm and engine pressure 264 pounds. No hydrant pressure is considered to boost the engine pressure.

A 1,000 gpm Class B pump will deliver 33.3% of capacity at 250 psi engine pressure, or 333 gpm approximately. The required pump pressure in Example 125 calls for 264 pounds. Then would it be true that a 1,000 gpm Class B pump would be a shade small in this case? On the other hand, with 14 pounds hydrant residual the job could be handled.

A pumping engine powered with a 105 gross horsepower (net horsepower is 89) is operating at a peak speed of 3,600 R.P.M. When operating the engine at 80% of peak speed, what will be the horsepower at 2,880 R.P.M., or 80% of peak speed? Would the per cent ratio between 80% of peak speed and the peak speed be constant?

I would also like you to check my figuring for loss of horsepower due to elevation and see if I have the engine efficiency correctly.

Does the above coincide with accepted standards in figuring loss of horsepower due to elevation?

A. L. R.

Answer: The 1,000-gallon Class B pump would be able to handle the load indicated in the example you cite, provided there was residual hydrant pressure which could be utilized in aiding the pumper. Theoretically, without this aid, the Class B pumper could not develop 75 pounds nozzle pressure under the conditions cited.

As to what the horsepower of a 105 gross horsepower engine would be when operating at 2,880 R.P.M., this could only be determined by reference to a performance curve of the particular unit. The ratio between 80 per cent of peak speed and the peak speed would not be constant.

With reference to the loss of horsepower due to the elevation of the unit, the table you give is partly correct. However, the engine horsepower for a 200 horsepower engine at various elevations would be as follows:

At sea level, 200 horsepower; 1,000 feet, 193 horsepower; 2,000 feet, 186 horsepower; 3,000 feet, 179 horsepower; 4,000 feet, 172 horsepower; 5,000 feet, 165 horsepower; 6,000 feet, 158 horsepower, and 7,000 feet, 151 horsepower.

If these horsepowers are developed at the different elevations, then the engine efficiences would be as given in your table.

The specifications for motor fire apparatus approved by the National Board of Fire Underwriters, the International Association of Fire Chiefs and the National Fire Protection Association indicate that the power generated by internal combustion engines decreases about 3.5 per cent for each 1,000 feet elevation above sea level. This is only an approximate figure, so we must consider that the figures given in the table are approximate only.

Fireman Killed in Odd Accident

A New York City fireman was killed Dec. 16th and two other firemen, a policeman, two civilians and an ambulance driver were injured, on Staten Island in the aftermath of a minor traffic incident.

The firemen, members of Engine 159, and the truck driver, were hosing away a gasoline spill from a wrecked tractor truck, while the policeman was helping direct traffic, when they were struck by a car that careened into them after hitting the truck.

The dead fireman was Harry Smith; the injured included Fire Captain Frank Goss and Anthony Palmer. Police said the trailer truck, jackknifed when it stopped suddenly for a traffic signal, causing a leak in its fuel storage tank. Firemen were called to wash away the spill and, while doing so, a car driven by James Weaver collided with the truck and sheered off into the group of men in the street.

LOSS OF HORSEPOWER DUE TO ELEVATION
(LOSS OF HORSEPWER IS 3.5% PER 1000 FT. ELEVATION)

Altitude Elevation in Feet	Engine Effieiency	Engine H.P. 53.25	Engine H.P. 100	Engine H.P. 200
Sea Level	100 %			
1,000 ft.	96.5	. . .	96.5	196.5
2,000 ft.	93	. . . .	93	193
3,000 ft.	89.5	. . . .	89.5	189.5
4,000 ft.	86	. . . .	86	186
5,000 ft.	82.5	. . . .	82.5	182.5

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Powerful Light

When he needs it—where he needs it

Big Beam

PORTABLE ELECTRIC HAND LAMPS

Model 700
2000-foot beam

Most powerful, heavy-duty hand lamp of its size. Adjustable 6-inch head. Operates on four standard No. 6 dry cells.

Model 211
1500-foot beam

Popular price, light weight, easy to carry. Adjustable 5-inch head. Operated on two standard lantern batteries.

Write for folder on complete information on these and other Big Beam dry-cell and storage-battery models.

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Don't discard those boots just because the TOPS are damaged or torn. Ship them all to us by parcel post. We will completely renew them with 15 inch TOPS from the middle seam up. Cost $4.25 per pair, saving you $10 or more on a new pair. We pay return express.

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Send us those ripped or torn

Rubber Raincoats and Turnout Coats

—let us put them into good condition, including loose buckles, Corduroy collars, etc., when damaged. You will find our prices reasonable and very little compared to cost of a new coat.

All repairs supervised and guaranteed by HARRY GODFREY, well known to Fire Chiefs.

GODFREY RUBBER CO. Inc.
32 Union Square East, New York 3, N. Y.

What's Burning?

THE following list includes fires of $10,000 loss and over in the United States and Canada for the month of December, 1953.

Month Ending December 31, 1953

Guntersville, Ala.—Six oil tanks at Guntersville Petroleum Co. and more than 100,000 gallons of gasoline,, three miles out, destroyed.
Clarksville, Ark.—R. A. Morgan Department Store damaged. Curious customer plugged in lights decorating Christmas tree; shooting sparks ignited cotton around base of tree.
Osceola, Ark.—Building in heart of business district, housing Florman's Dry Goods Store, City Market, law offices of Fred Gaylor and Ralph Wilson and apartment above the grocery occupied by Jim Pittman, destroyed. Overheated electric refrigerator motor.
Bakersfield, Cal.—Perma-Seal Insulation Co. warehouse destroyed.
Los Angeles, Cal.—Apartment building damaged. Sparks from incinerator.
Los Angeles, Cal.—Diamond Walnut Co. warehouse destroyed.
Los Angeles, Cal.—Meletron Corp. plant destroyed. Loss included stock of pressure actuated aluminum switches for aircraft.
San Diego, Cal.—Hotel San Diego damaged. Cigarette tossed aside by dancer.
Dover, Dela.—Burton Building destroyed. Short circuit in wiring.
Crestview, Fla.—Crestview High School building destroyed.
Miami Beach, Fla.—Hayes, Ltd., men's clothing shop, damaged. Faulty transformer in a neon sign.
Tampa, Fla.—Pink Elephant Night Club destroyed.
Tampa, Fla.—American Can Warehouse, Chem-Ice Co. and Marine Supply and Oil Co., destroyed.
Atlanta, Ga.—Horseshoe Supper Club, Highway 32, between the Atlanta city limits and Atlanta General Depot, destroyed.
Atlanta, Ga.—Combined gasoline station and grocery store damaged.
Brunswick, Ga.—First Methodist Church's education building destroyed.
Gainesville, Ga.—River Ben School in Hall County destroyed.
Charleston, Ill.—Don Cole Motor Co.'s garage damaged.
Chicago, Ill.—Building at 4360 Broadway damaged. Oil heater.
East St. Louis, Ill.—Grain elevator and empty warehouse on E. St. Louis waterfront, owned by Terminal Railroad Association of St. Louis, destroyed.
Hoopeston, Ill.—First Church of Christ destroyed.
Watseka, Ill.—Ninl Transportation Co. warehouse destroyed.
Springfield, Ill.—Building housing State laboratory equipment at entrance to Capital Airport, rented by the State from Springfield Airport Authority, destroyed.
Borden, Ind.—Borden High School gymnasium and adjoining grade school building, destroyed.
Burlington, Ind.—IGA Grocery store and drug store owned by Devon Alters destroyed.
Goodland, Ind.—Judson Dunaway Co. plant, makers of cleaning chemicals, damaged.
Indianapolis, Ind.—Section of Raco Corp. plant, makers of prefabricated houses and overhead doors, and Bates Shipping Co., packager of small batteries, damaged.
La Porte, Ind.—Three buildings in business district occupied by shoe shine store, destroyed; Lilly's women's wear and Reilling's shoe store, heavily damaged.
Mt. Vernon, Ind.—Al Rio Cafe, apartment building owned by Edward Turner, destroyed. Washington Tavern, Tate's Beauty Shop and Yaggi Plumbing Shop, damaged.
Warsaw, Ind.—Dalton Foundry plant No. 2, destroyed.
Indianola, Ia.—Building housing two law offices, real estate office, florist shop, barber shop, Western Auto Shop and six apartments, damaged. Defective furnace.
Jewell, Ia.—Building housing May Equipment Co. and Pewell Motor Co. destroyed.
Marango, Ia.—Iowa County Savings Bank destroyed.
Sioux City, Ia.—Building housing Holman-Maytag Appliance store destroyed.
Cardinal, Ky.—Tipple and washing plant of Kentucky Cardinal Coal Corp., near Harlan-Bell County Line, destroyed.
Lakeland, Ky.—Central State Hospital laundry destroyed.
New Orleans, La.—Warehouse owned by A. Marz & Sons Co. damaged.
New Orleans, La.—Building owned by Mrs.

ALBANY FIRE DEPT.

Get to the fire safely

with this new license plate sign that *stays reflective, day or night!*

These durable, trouble-free "Firefly" signs are heavy aluminum plate with reflective "scotchlited" surface, yet so inexpensive that they should be used on every one of your vehicles.

Available in "Fire Chief," "Asst. Fire Chief," "Fire Company," "Fire District," "Fire Police," "Fire Capt.," "Fire Warden," "Fire Marshal," and in four different shapes. Also scotchlite emblems to apply directly to bumper, etc. See your Dealer, or Write to

PACIFIC REFLEX SIGNS
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BADGES by Everson-Ross

One of the oldest and always — one of the best!

Do you have our latest circular of Fire Badges? It's yours for the asking.

EVERSON-ROSS
[illegible] CHAMBERS ST. NEW YORK [illegible] N. Y.

Leona Venson, containing apartments and bar, damaged.

Elkton, Md.—Three business buildings on East Main street destroyed. One building, in which the fire started, housed six empty second-floor apartments and the Pappas Restaurant, the Wee Tot Shop and the Elkton Gas Co. offices on the first floor; two adjoining buildings, one occupied by the William B. Merry & Sons Co., wholesale candy and tobacco firm, and the other building housed the Frazer Drug store.

Cambridge, Mass.—Building in John Corcoran Park Housing Project of Cambridge Housing Authority, damaged.

Holyoke, Mass.—Four-story city block of apartments and stores on High Street, destroyed.

Algonac, Mich.—Pearl Beach Hotel destroyed.

Battle Creek, Mich.—Kirby shoe store and Lantern Gardens Restaurant, destroyed.

Columbus, Mich.—St. Phillip's Catholic Church, destroyed.

Dearborn, Mich.—C. A. Kandt Lumber Co. damaged.

McBain, Mich.—McBain Christian High School damaged. Boiler explosion wrecked heating plant.

Pontiac, Mich.—Oakland County Road Commission storage garage damaged.

North St. Paul, Minn.—C. A. Lund Ski Co. plant destroyed.

St. Paul, Minn.—Building housing West Side Pool Hall, Carioca Bar and B. Mintz business establishment and apartments, destroyed.

Spring Lake Park, Minn.—Shimak & Bylander Sash and Door Co. destroyed.

Maben, Miss.—Auditorium, work room and athletic department of Maben High School destroyed. Fire crackers thrown by small boys.

Eldon, Mo.—Citizens National Bank, Wright's Furniture Store and Eckenberger's Hardware Store, all in heart of town, destroyed.

Linn Creek, Mo.—Osage Products Co., cedar closet lining factory, on U. S. Highway 54, destroyed.

Nashua, N. H.—Henry's Diner opposite City Hall, destroyed.

Asbury Park, N. J.—Building housing Monmouth Vacuum Co., Frederick Typewriter store and shoe repair store, damaged.

Atlantic Highlands, N. J.— Log Cabin Inn, a Jersey shore landmark, destroyed.

Augusta, N. J.—Barn on George Fetzer farm in Frankford township, destroyed.

Camden, N. J.—Deb Shop, Brant's Men's Store and Beck's shoe store damaged.

Newton, N. J.—Barn owned by George F. Meyer, destroyed.

South River, N. J.—Templar Oil Products Co. plant destroyed.

Union City, N. J.—Buffalo Head Building Supply Co. storehouse destroyed.

Woodbridge, N. J.—Woodbridge Pottery Co. destroyed.

Akron, N. Y.—Whiting Engineering & Supply Co. destroyed. Company manufactures automatic doors for tractor-trailers.

Buffalo, N. Y.— Waterfront grain warehouse owned by Russell-Miller Milling Co., destroyed.

Liverpool, N.Y.—Nichols I.G.A. supermarket destroyed.

Lyons Falls, N. Y.—Bales of stored paper in former sawmill and ground pulp mill of Gould Paper Co., destroyed.

Ogdensburg, N. Y.—Grand View Restaurant on Route 37, three miles south, destroyed.

Richfield Springs, N. Y.—Town warehouse destroyed. Escaping gas fumes were ignited by two stoves used to heat the building.

Sodus Point, N. Y.—Volunteer fire station and adjacent home destroyed.

Wilmington, N. C.—J. P. Newton Tractor Works destroyed.

Larimore, N. D.—Larimore Elk Valley Farms elevator destroyed.

Tioga, N. D.—Hunt Oil Co. No. 1 Lawrence Pederson well in Tioga oil field, damaged.

Andover, Ohio— Andover Garage, agency for Buick, Olds and Chevrolet automobiles, destroyed.

Bucyrus, Ohio—Norton Greenhouse destroyed.

Bucyrus, Ohio—Cobey Corp. farm machinery plant damaged.

Cleveland, Ohio—Mayflower Drug Store, China Gate Restaurant and Burgeson's Furniture Store damaged.

Clyde, Ohio—Clyde Truck Terminal of Midstates Freight Co., on U. S. Route 20, a mile east, damaged.

Portsmouth, Ohio—Harsha Milling Co. destroyed.

Youngstown, Ohio—Boardman Shopping Plaza, Route 224, housing appliance store of Stambaugh-Thompson Co., John Ambriola imported foods, Favor-It Hostess Shop and Thom McAn store, damaged.

Fort Sill, Okla.—Building housing the quartermaster laundry on Fort Sill Military Reservation, damaged.

Tishomingo, Okla.—The Texoma Hotel, Southern Oklahoma landmark, destroyed.

Burns, Ore.—Bend-Portland Truck Line garage offices destroyed.

McMinnville, Ore.— Alderman Farm Machine Shop destroyed.

Portland, Ore.— Garrick Apartments Damaged. Cigarette.

Portland, Ore.— Benjamin Franklin Savings & Loan Association building damaged.

Portland, Ore.—Best-Ever Laundry destroyed.

Allentown, Pa.—Warehouse of Valley Transfer and Storage Co. destroyed.

Bainbridge, Pa.—Barn and tobacco shed of Gene K. Renninger farm, 20 miles northeast, destroyed. Spontaneous ignition.

Beaver Falls, Pa.—Building in downtown section occupied by Union Clothing Co. damaged. Faulty coal furnace.

Downington, Pa.—Barn and adjoining garage on Charles Popjoy farm, destroyed.

Harrisburg, Pa.—Hall Office Building damaged.

Homestead, Pa.—Elks Club destroyed.

Lebanon, Pa.—Warehouse of General Electric Co.'s Lick Division, damaged.

Mahanoy Plane, Pa.— American Legion Home damaged.

Philadelphia, Pa.—Supermarket damaged.

Scottdale, Pa.—Factory building of Briggs & Burwood Co. damaged.

Union City, Pa.—Building housing variety store, clothing store and apartments in business district destroyed.

Warren, Pa.—G. E. Green Metal Stamp Co. plant damaged. Plant reportedly was manufacturing products on U. S. Government orders.

Waynesburg, Pa.—Achlin Lumber Co. damaged.

York, Pa.—White Rose Skating Arena destroyed.

Cleveland, Tenn. — South Cleveland Church of God damaged.

Pulaski, Tenn.—Feed mill of MHM Hereford Farms destroyed. Defective wiring.

Savannah, Tenn. — Crump Elementary School building destroyed.

Crockett, Tex.—R. L. Shivers building, housing Shivers Hardware, Elks Club, furniture storage and an accounting office operated by Harry Simmons and adjoining building occupied by Ham's Ready-to-Wear store, damaged.

Taylor, Tex.—Melasky building housing Brunner & Williams Drug Store; Cinnamon's men's clothing firm, office of Dr. Edmund Doak and accounting firm of Virgil Dupree, damaged. Defective air conditioning unit.

Woden, Tex.—Woden High School building destroyed.

Franklin, Va.—Prebles Department Store damaged.

Grundy, Va.—Supply house owned by D. J. B. Colleries, Inc., 15 miles west, Pike County, Ky., at site of D. J. B. coal mine, destroyed.

Hopewell, Va.—Apartment building destroyed.

Norton, Va.—Coal tipple, property of Coal Processing Corp., destroyed. Three Interstate Railroad cars heavily damaged.

Richmond, Va.—Warehouse of Seed Stocks Co. of Virginia on Byrd Airport property destroyed.

Castle Roch, Wash. — Leo's Chicken Inn destroyed.

Moses Lake, Wash.—Utah-Idaho Sugar Co. refinery destroyed. Explosion.

South Tacoma, Wash.—Northern Pacific Railway Shops damaged.

Tacoma, Wash.—Rex Service Welding station destroyed. Explosion.

Yakima, Wash. — Yakima Furniture Store destroyed.

Leon, W. Va.—Leon Milling Co. plant destroyed.

Beloit, Wis.—Beloit College Chapel destroyed.

Columbus, Wis.—Columbus Municipal Light & Water Plant destroyed.

Green Bay, Wis.—Mayfair building in downtown destroyed.

Marshfield, Wis.—Hotel Blodgett destroyed.

Milwaukee, Wis. — Northwestern Products Co. building destroyed.

Calgary, Alta. — RCAF's main aircraft stores building at No. 24 Air Materiel Base destroyed.

Vancouver, B. C.—Storage shed of United Distilleries Ltd., destroyed.

Truro, N. S.—Stanley Hotel destroyed.

Eastview, Ont.—Rambling building on Clairson Lumber Co., Ltd., destroyed.

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Closing date for copy 25th of month preceding date of issue.

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1½" DOUBLE JACKET

OUR BEST $$$ VALUE TO DATE

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1930 Ahrens-Fox City Service Ladder Truck in good condition. Completely equipped with ladders from 12' to 50'. Available for inspection and early delivery. Closing date of bids January 20, 1954. For further details write:

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7½ volt 4F5H—$4.50
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We pay all postage charges
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Two 1928 750 Pumpers and one 1939 Quad. Pumper, all American-LaFrance, complete, ready for immediate delivery; guaranteed first class condition. Write or wire Tom Ferguson Co., 2462 Grand, Kansas City, Mo.

FOR SALE

1927 Seagrave Double Bank City Service Truck. Fully Equipped. Excellent Condition. Inventory available. May be seen Greenwich F. D. Headquarters.

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Old Greenwich, Conn.

FOR SALE

American LaFrance 1926 Quadruple ladder truck with 500 Gal. Pump, 225 ft. ladders, water tank. Hose reel and other equipment. Available for delivery in February. Write:

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PUMP

A new, better, APPARATUS PUMP!

Here's a pump you can be proud of! Delivers 150 GPM at 150 lbs. Beautifully designed and built by skilled New England craftsmen. Specify on new apparatus or use as replacement. Let us send you complete data and name of nearest dealer.

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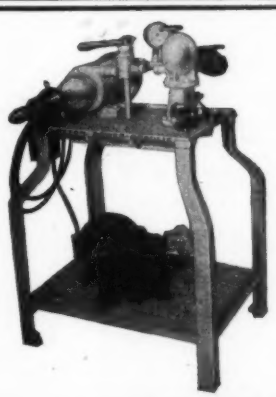

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LARGE OR SMALL . . .

DAYTON HYDRAULIC EXPANDER

MEANS BETTER HOSE CARE

Expands Couplings from ¾" to 6" Size
Tests Hose Up to 700 Lbs.

Extra Attachment Removes Expansion Rings from Old Hose
More Pressure — Larger Motor — Roomier Work Table

Regardless of the size of your department, there is an Expander for your requirements.

Send for Illustrated Bulletin

Dayton Fire Equipment Co.
1242-48 W. 2nd St., Dayton 7, Ohio

Ottawa, Ont.—Building housing sergeants' mess and hospital quarters at Uplands RCAF Station, southwestern outskirts of city, destroyed.
Ottawa, Ont.—Guiges Roman Catholic School damaged.
Toronto, Ont.—Price Lumber Yard, Scarboro Junction, damaged.
Windsor, Ont.—Section of Frod Co. of Canada, damaged.
Montebello, Que.—Commercial Hotel destroyed.
Sorel, Que.—Sorel Steel Co. destroyed.

The Cover Picture

The cover picture on this issue shows a four-engined transport plane dumping 1,600 gallons of water on a simulated brush fire, during recent tests at Rosamond Dry Lake, near Los Angeles, Calif.

The purpose of the tests, which were witnessed by representatives of Los Angeles County, City, State and Federal fire fighting services, was to determine the pattern of water dispersal as a means of checking brush and forest fires in rugged terrain until ground parties can reach the areas.

Los Angeles County Fire Chief Keith E. Klinger hailed the experiments as "very encouraging." He said "the result was a definite effect on the fire, although we did not attempt to actually put out the flames. Primarily we are interested in developing water dispersal patterns and in instrumentation tests."

James K. Mace, Deputy State Forester, said that research on the plan of aerial bombardment of fires "has just begun, but we may well be on the threshold of a new era in fire control." Both he and Chief Klinger credit Donald W. Douglas, Jr., vice-president and test director of the aircraft concern, with having suggested the idea of using big planes as water transports in battling flames. "Obvious procedures entail use of such ships over rugged terrains difficult to reach by ground routes and in which persons may be trapped by flames uncontrollable except from the air," Mace said.

No Federal Tax on Disability Compensation

Fire fighters throughout the United States will benefit from a victory just won by members of the San Francisco fire department.

The San Francisco department obtained a ruling from the Bureau of Internal Revenue that firemen need not pay income tax on disability compensation.

The ruling arises from the fact that San Francisco firemen, when injured on the job, receive disability payments amounting to full salary, for a limited period of time.

Ordinarily, workmen's compensation amounts to only a fraction of full salary and as such has been exempt from income tax payments.

Now, however, the Bureau of Internal Revenue has ruled that "inasmuch as the taxable status of compensation insurance payments received by firemen, as provided by San Francisco's Charter, is factually similar to workmen's compensation, the Bureau will hold these payments to be exempt from Federal income tax."

The ruling is of great interest and potential "dollars and cents" value to firemen and fire departments everywhere that disability payments, even for a limited period, equal the normal full time salary.

K. R. MACDONALD

Morning Pride
FIRE SUITS

Fleece Lined Natural Rubber
Flannel Lined Combined Duck
High Quality Army Duck

•

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MITTENS
GLOVES
DETACHABLE LININGS

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Chief---
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CHIMNEY FIRE EXTINGUISHER

Save rushing to chimney fires—avoid slippery roofs by using IMP Chimney Fire Extinguisher. Just throw a 65c package "as is" on the hottest part of the fire in the stove, furnace or fireplace. The chimney fire will be out in jigtime without water or chemical damage. Recommended by many chiefs who carry IMP in their cars. ALSO—LIQUID IMP for *oil fired units*, is as much a fire preventative as pkg. IMP. Saves oil, money, increases heat, prevents sludge, reduces carbon deposits and is safe. You know what a fire hazard sludge is. Use LIQUID IMP in your own burners. 3½ oz. enough for 90 gals. kerosene or 55 gals. No. 2 fuel oil; 16 oz. enough for 5 times above quantity; 1 gal. enough for 1600 gals. #2 fuel.

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Please send.....doz. package of IMP @ $7.80 per doz.
and/or.....doz. 3½ oz. Liquid IMP @ $9.00 per doz.
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I will honor your bill f.o.b. Bridgeport.

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DEALERS — *Why should you promote and sell Blackinton Badges?*

Because — (1) Blackinton sells only through authorized dealers in the United States and Canada — we protect and encourage your sales effort — we do not contact departments direct.

(2) *Lower* selling price with *higher* dealer discounts to you.

(3) Constant improvement in *design, finish* and *development.*

BLACKINTON

V. H. BLACKINTON & CO., INC., ATTLEBORO FALLS, MASS.

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FASTER

MORE EFFECTIVE... MORE DEPENDABLE

FIRE-STOPPING POWER

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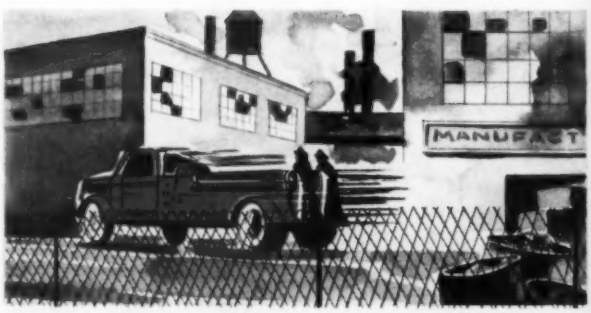

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